BOSTON UNIVERSITY

College of Business Administration

THESIS

Labor Participation in Time Standard Determination

by

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I INTRODUCTION

As the extent to which wage payment plans have become dependent on standard setting technique has increased, the old distinction between wage payment methods has disappeared. Originally there was a very distinct difference between piece rate and bonus or incentive system on one hand and time work on the other. However, with the increasing use of standards to determine the daily work requirement of employees, regardless of the particular system of remuneration used, this distinction has, to a large extent, vanished. The use of time study and the strict enforcement of production standards goes far toward the obliteration of this line of distinction that previously lay between the systems that pay solely for results and those that pay for the time served. (1)

With the destruction of this distinction, the problems faced by all production workers have become increasingly similar. No longer is the hourly worker free frm compulsion and "speed-ups" felt by the workers paid on the basis of results. As a consequence, organized labor has beomce increasingly engrossed in this problem which affects its members so directly. Each union has had to work out a definite stand to take on the issue. Many managements give added urgency to the need for deciding upon a specific course to follow by their insistence that the techniques are solely management's prerogatives and beyond the scope of collective bargaining. This approach, labelled by Mr. William Gomberg of the International Ladies' Gar-

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1. Van Dusen Kennedy, Union Policy and Incentive Wage Methods (New York, 194), pp. 27-28.

ment Workers Union "the exclusive approach," (1) is extremely reminiscent of the generally rejected commodity theory of labor. The degree of correspondence may be readily recognized in its definition which states that techniques and resolution of problems arising from them are management's prerogatives. (2) Obviously no labor organization can subscribe to this theory, and hence must develop a counter to it.

The concern of this study is with their methods of coping with the problems arising in administration of a policy toward time standards. What are the weaknesses labor finds in the methods used in setting standards? Why do they exist? What is done to prevent these weaknesses from working hardships on the people for whom they are set? Is some form of participation needed for giving adequate protection? If so, to what extent must it be in order to be effective? The answers to these questions reveal the pattern of labor reaction to time study and its views on participation in the determination of standards.

1. William Gomberg, "Union Interest in Engineering Techniques," Harvard Business Review, (Spring, 1946), p. 356.
2. Ibid., p. 356.

Definition of Terms

The term "labor," as used in this study, refers to workers formally organized into definitive labor organizations. It has been limited to this extent for two reasons. In the first place, the likelihood of discovering a well defined policy origination from an unorganized group is so slight that this study would be of little significance because of the small number of occurrences. In the second place, because of the similarity of interests, regardless of whether the workers are organized or not, the point of view of the organized workers would appear to apply equally to those who are not.

The term "participation" is used in a rather broad sense to embrace labor's activities with reference to the setting of standards. The possibilities are active or passive participation. The former carries with it the assumption of some responsibility for the correctness of the various phases of the process of determining standards. This type is epitomized by the situation that existed in the Cleveland garment industry following World War I in which the union was actively engaged in every phase of standard setting and shared the responsibility for them. The latter, passive participation, indicates that the union accepts no part in the determination of the standard other than the possible prescription of minimum requirements for conditions and accepts its imposition only after some type of empirical testing has indicated that it is satisfactory.

The term "time standards" conforms to the generally accepted definition, the time determined by time study to be needed for a normal operator to perform a given operation.

Implications of Participation

Labor participation in the determination of time standards is not as cut and dried a situation as one might expect. In fact quite the contrary is true. There are certain aspects of the situation that have caused many labor leaders to hesitate before accepting any responsibility in the determination of these standards. As soon as labor gains the right to participate in these determinations there are certain implications attached to this acceptance that are quite distasteful. In the case of many local union groups, they have caused them to refuse direct participation in management wage setting activities, and merely retain the role of challenger in relation to scientific management methods. (1)

The major inference to be drawn from active participation is that labor has accepted management's view that modern time study is a factual measurement which should not be subject to bargaining,and consequently that the problem of standard determination is one that can be solved by mutual deterination of objective facts. (2) The unions are quite vehement in their denial of this implication. This denial does not represent a categorical rejection of the use of time study in the determination of standards, but rather a denial of the absoluteness with which management views the results. Labor, to a certain extent, accepts time study as a useful tool in the measuring or estimating of a reasonable day's work, but insists that this acceptance of time study must not be confused with the acceptance of

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1. Kennedy, Union Policy and Incentive Wage Methods, pp. 150-151.
2. Ibid., pp. 150-151.

all the claims of its practitioners, as its use might imply. (1)

A variant of this view held by other labor leaders, is that the stop watch is potentially one of the most effective tools in promoting labor-management cooperation; whether this potentiality is realized or not depends on the methods employed in its use. If it is used correctly, it establishes facts which cannot be controverted, and if improperly used will yield results that can and often do lead to embittered labor-management relationships. (2)

Another inference to be drawn is one that is particularly troublesome to the local union leaders and is based on the extreme difficulty of taking an impartial view of production problems in the plant and simultaneously attending to the demands and interests of the membership of the union. As soon as they share some responsibility for the rates and standards that are imposed on the workers, they lay themselves open to grave suspicion and criticism by the rank-and-file memberships of the union on the grounds that they are not looking out for their best interest and have "sold out to the management." This accusation is apt to be levelled with nothing more substantial for grounds than the workers' traditional prejudice toward scientific management which makes anyone who accepts it suspect. (3)

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1. William Gomberg,"Wage Incentive Practices," Studies in Personnel Policy #68.
2. Morris Cooke and Phillip Murray, Organized Labor and Production (New York, 1940), p. 118.
3. Kennedy, Union Policy and Incentive Wage Methods, pp. 150-151.

The degree to which these implications apply varies according to the extent to which the unions participate in the determination of the standards. As might be expected, those which only take a passive part, doing nothing more than challenging piece rates set by the employers, are much less troubled by these implications and the reactions that they cause than those who participate with management in the studies, the results of which are considered to be the end-product of mutual determination.

II DETERMINATION OF TIME STANDARDS

"The methods of wage payment matter little compared with the method of determining the stadards upon which the wage is based." (1) Modern management presents time and motion study as the most equitable and accurate process for determining these standards, characterizing it when properly employed as a combination of techniques and procedures demanding a trained and skilled personnel, full and careful preparation, and continuous application with no motives but efficient industrial operation and just compensation. (2)

In the determination of a time standard there are three distinct steps which must be taken before the definitive standard is obtained. The first is the determination of the selected time for each element by averaging the times gotten from the stop-watch study. The second is the calculation of the levelled time, which represents the time in which the average worker would be expected to perform the operation. The third step is the application of various allowances to this levelled time to take into account the various delays of every type that might be expected to occur in the cycle; the application of these allowances to the levelled time will give the allowed or standard time for the performance of the operation.

1. Cooke and Murray, *Organized Labor and Production*, . 116.
2. Kennedy, *Union Policy and Incentive Wage Methods*, pp. 30-40.

Selected Time

A discussion of selected time should really be subdivided into two sections, one on the recorded time which is the time that is recorded on the observation sheet as the result of observation, and the selected time, which is the time that is decided is most representative of the time necessary to do the particular operation. This latter time is arrived at in a variety of ways that will be discussed later.

Since the recorded time is the basis of the allowed or standard time for an operation, it must be obtained with the utmost accuracy. Strengthening the argument for the necessity for accuracy in obtaining the recorded time is the fact that under normal circumstances the recorded time comprises 75% of the final result. Thus, be exerting a great stabilizing influence and forcing the variables into a small segment of the final result, it enhances the degree of consistency which may be obtained from a time study. (1) This fact is acknowledged by both labor and management so that in theory there is complete accord on this point, however in practice there is some disagreement on the method to be used in obtaining this selected time. Labor insists on certain conditions and methods that do not always coincide with the practice favored by management.

The equipment to be used for a time and motion study is quite standardized, the few variations that do exist being of no importance. The fact that a stop-watch is to be used is usually not questioned, that it is to be a decimal rather than a split second watch is a matter of ex-

1. Ralph Presgrave, Dynamics of Time Study (New York, 1946), P. 32.

pediency that is well recognized, whether it is to be a decimal minute or hour watch is of no consequence since by the use of a conversion factor the readings obtained from these are, in effect, identical.

The board for holding the watch and the observation sheet, and the use of writing instrument and slide rule, and the form of the observation sheet are details over which there is no disagreement.

The amount of data on the conditions surrounding the performance of the operation is a matter on which labor often expresses itself quite positively. It feels that in order to avoid any argument after the standard is put into operation that very complete data should be assembled as to the conditions extant at the time of the study--speed and feed of the machine, the quality of the materials including some estimation of the quality as compared to what might normally be expected, specifications to which the operator must work, type of machine used, condition of the machine. By requiring this exhaustive compilation of conditions they obviate the danger of too "tight" a standard being set because of unusually favorable circumstances at the time the study was made. (1)

These precautionary measures would be in vain if the method were not carefully studied and recorded at the same time since a method change after the standard was set would invalidate it just as much as a change in the material or machine. (2) In order for the study to have any lasting value, both the conditions and the methods must be recorded carefully so that any deviation can be found and compensated for. Although these re-

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1. Kennedy, Union Policy and Incentive Wage Methods, pp. 40-45.
2. Cooke and Murray, Organized Labor and Production, p. 116.

quirements are set forth by labor, they are equally valid from management's standpoint.

The question as to who shall be timed is one that has been point of contention many times between management and labor. Many time study men seem inclined to the belief that a better than average operator should be studied because of the fact that the skilled man is better for observation purposes than the average or poor one, since he is much less likely to introduce variables that will have to be discarded when the computations are made. (1) Psychologically this use of the better than average worker is bad because many of the workers, not understanding that all standards are adjusted to the capacity of the average worker, will feel that the standard time will be so low as to be almost impossible of attainment for him. The usual consequence of this feeling is the loss of theworker's good will and cooperation. (2) To a certain extent this question has been cleared up so that now it is generally agreed that the average worker is the one to be timed. This acceptance of the average worker as the one to be timed is often based not on the belief that he is the best one to be timed but rather on the realization that the bad psychological effect of timing any other worker is likely to be out of proportion to the importance of the issue--although this is a pragmatic solution,since no basic tenet is violated it is quite defensible, especially in view of the fact that all times are levelled to the average worker anyway. The reason that the better than average worker is advocated by some time study authorities is that

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1. Richard H. Landsburgh and William R. Spriegel, Industrial Management (New York, 1945), p. 377.
2. Ralph Barnes, Motion and Time Study (New York, 1942), pp. 250-251.

since his motions are uniform, his methods apt to be the best, and his work steady, he will be easier to time and rate than an average worker whose work standards are not as high. (1)

This agreement as to the operator to time doesn't completely solve the problem since there is still the necessity of deciding which of the workers are average and hence eligible to be timed. The concept of the average worker is rather vague and may easily become the subject of controversy as was the case in the Cleveland garment industry in 1923 when the labor time study engineer embodied in his report to the union a criticism of the time study men's selection of the average worker, claiming that the concept of the average worker was exceedingly vague and that the workers selected were above average in efficiency. (2)

The need for too accurate a determination of this average worker has been removed to a large extent by acceptance of the prinicple of levelling which adjusts the selected time to the level of the average worker regardless of the efficiency of the operator observed. That this latter course is being followed to an increasing degree may be seen by a study of representative contracts for those industries where time study is used extensively. In many of these contracts nothing is said about what operator is to be timed, merely that the rates when set shall be within the capacities of the normal or average worker. The agreement between General Motors Corp. and the International Union of United Automobile, Aircraft, and Agricultur-

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1. Landsburgh and Spriegel, Industrial Management, pp. 377-378.
2. Sumner H. Slichter, Union Policies and Industrial Management (Washington, D.C., 1941), pp. 405-410.

al Workers (CIO) stipulates that the production standards shall be within the reasonable working capacities of normal operators. (1) The Hood Rubber Company agreement with the Rubber Workers Union Federal local #21914 (AFL) states the same thing. (2) The agreement between the Jones and Laughlin Steel Corp. and the United Steel Workers of America merely states that an appropriate rate will be established by the procedures regularly used by the industrial engineering department. (3) The fact that no mention is made of the operator to be timed indicates quite strongly the acceptance of the process of levelling or rating, which is a common procedure used to obtain the amount of production to be expected from the average worker.

Two methods of timing with the stop-watch are commonly used--the snap-back method,and the continuous method--each of which has its proponents. The snap-back method which involves snapping the watch back to zero immediately after reading the elapsed time for each element, although used by a large number of companies, is criticized both by labor and opponents of this system among time study engineers. Its advocates claim that by treating each element as a separate story that more time is available to the time study man for analysis and rating of the element. They further claim that foreign elements may be eliminated from the study by stopping the watch during any period in which the operator is engaged in doing anything but the elements of the operation; it is at this point that the majority of the criticism of this method is aimed. Labor feels

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1. "Collective Bargaining Developments and Representative Union Agreements," Studies in Personnel Policy #60 (1944), p. 40.
2. Ibid., p. 45.
3. Ibid., p. 29.

that included in time study should be those elements that occur irregularly in the cycle as well as those that are an integral part of it. (1) Not only should these foreign elements and delays be included in the study, but they should also be described accurately and included in the elements of the operation if they occur with any regularity and are actually inherent in the operation. (2) The policy of just timing the elements that occur in every cycle and placing all other elements in the allowance is considered poor time study practice. Phillip Murray and Morris Cooke take a more positive position and state that the continuous method is the one to be used rather than just criticizing the snap-back method. (3) Another aspect of the snap-back system that causes it to be held in disfavor is that, purely from a mechanical standpoint, it makes the observer's task more difficult.

> "At best, the observations require the utmost alertness and concentration on the part of the time study man. The use of the snap-back method, instead of the continuous method, makes still greater demands upon his attention, which will naturally affect the accuracy of his work." (4)

This is due to the fact that at the end of each element he must do three different things simultaneously--determine the exact point at which the element is completed, make a mental note of the reading, and then snap the watch back to zero. The greatest sources of error inherent in this are those brought about by the necessity for returning the hand to zero at the termination of an element; in this category are such errors as the time re-

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1. Kennedy, Union Policy and Incentive Wage Methods, pp. 40-49.
2. Herbert J. Meyers, Simplified Time Study (New York, 1944), chap. 10. Barnes, Motion and Time Study, p. 216.
3. Cooke and Murray, Organized Labor and Production, p. 117.
4. Stewart M. Lowry, Harold B. Maynard, and G. J. Stegmerten, Time and Motion Study (New York, 1927), pp. 95-96.

quired to return the hand to zero,and the tendency to snap the watch back either before or after the completion of the element. (1)

The continuous method which is generally acknowledged to be the most satisfactory method by both labor and management varies from the snap-back in that the watch is allowed to run continuously either for the entire length of the study or just for the cycle. In either case total elapsed time for the period of the study is accounted for; no element, no matter how foreign to the operation is omitted. When an unusual element appears, it is timed and noted on the study sheet. Later these foreign elements are studied to determine whether they appear regularly and should be included in the operation or whether they are chance occurrences which should be taken into account in the allowances that are added to the study results. (2) In any event the omission of delay elements is precluded by this method, and one possible cause of an excessively "tight" standard is removed. In addition to removing one of the major objections to stop-watch studies, this method has other characteristics which incline labor to its favor. By removing the necessity for snapping the watch back at the end of each element, the errors attendant on this action are prevented, removing another objection to stop-watch studies. The subconscious effort to achieve consistency at the sacrifice of accuracy is defeated by the leaving of the computation of the elapsed time till the end of the study and concentrating on reading the watch during the observation period. (3) Thus it may be

1. Ibid., pp. 95-96.
2. Ibid., pp. 95-96.
   Robert Lee Morrow, Time Study and Motion Economy (New York, 1946) p. 103.
3. Lowry, Maynard, and Stegmerten, Time and Motion Study, p. 96.

seen that by its nature the continuous method possesses many virtues that cause it to be preferred by labor.

In order to secure the selected time for each element in the cycle, it is necessary to extract from the series of elapsed times that has been collected, that time which is most representative of the series and hence of the element under consideration. There are a number of methods of obtaining this figure, some much more favored than others. Use of the minimum time in the series as the selected time is held in extreme disfavor by labor. It is felt, with considerable justification, that the use of this time is extremely unjust to the worker, forcing him to work at a pace which it is questionable that he ever achieved since in many cases the extremes of the series are a result of the observer's error rather than the worker's accomplishment. (1) Management justifies this minimum time by maintaining that if a worker is capable of doing it once, he is capable of doing it consistently. If this point of view is held, it is incumbent upon management to discover the method by which it was attained and teach it to the worker so that this minimum time will become the representative time for the accomplishment of that element. A variation on the use of the absolute minimum time occurring in the study is the use of the minimum time that occurs at least 10% of the time. When this system is used, the allowances for delays and fatigue are enlarged so that the resultant allowed time is identical with that which would be obtained by using a selected time computed from some other basis. (2)

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1. Kennedy, Union Policy and Incentive Wage Methods, p. 43.
2. Morrow, Robert Lee, Time Study and Motion Economy, p.107.

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Selected time is sometimes arrived at by the use of "good time." This is the time value which, in the opinion of the analyst, is most representative of those in the series notwithstanding the fact that the arithmetical average or mode may indicate a different one. There is a large element of personal judgment in this value which leads labor to feel that the possibilities of injustice to the worker are considerable. Because of this element of arbitrariness,this method is seldom used for the determination of selected time. Neither this method nor the minimum method are generally used because of the weaknesses stated above.

The most generally accepted methods for arriving at the selected time are through the use of the arithmetic mean, mode, or modal average, the method used depending on the facts of the particular case in question, or the preference of the analyst. (1) All of these systems are about equally justifiable in view of the fact that in a homogeneous system they all represent methods of determining a representative value for a series. Mr. William Gomberg, of the International Ladies' Garment Workers Union, prefers the arithmetic mean, basing his preference on the law of large numbers which states that as the number of readings increase, the expected value will come closer to the mean. (2) Since all of them are easily defensible, there is little dogmatic adherence to one over another.

In all three cases mentioned above there are certain precautions which must be observed in their application in order to retain their theoretical defensibility. When either of the modal methods is used, it is

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1. Kennedy, Union Policy and Incentive Wage Methods, p. 46.
2. William Gomberg, "The Relationship Between the Unions and Engineers," Mechanical Engineering, (June, 1943), p. 427.

necessary to take a sufficient number of observations to insure the establishment of the mode. Use of the arithmetic average requires not only that a sufficient number of observations be taken but also that extreme care be exercised in discarding any values that appear to be abnormal. What constitutes a sufficient number of cycles is primarily a matter of personal judgment tempered, perhaps, by the dictates of good statistical procedure. Actually this is quite a reasonable approach to the question because such factors as the skill of the operator, the number of elements in the cycle, the consistency of the operator, the possible variation in the length of the study, and the relation of machine time to handling time exert such an influence over the number of cycles needed to arrive at a true value. There is, of course, a certain amount of disagreement caused by this vagueness, but it is by no means an irreducible obstacle, since there are statistical laws of sampling which may be used as a guide. (1)

Theoretically there should be no unexplained abnormal time values because each is caused by an identifiable factor that should be recognized and isolated at the time the study is made. (2) Since time study men are fallible they do appear in studies and present problems as to how they should be treated. The great temptation is to reject all values that are apparently abnormal; however, this practice is open to criticism because these abnormal times are caused by factors that should be considered in arriving at a selected time. It is for this reason that many authorities advocate the retention of all but the extreme abnormalities in the series whose arith-

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1. William Gomberg, "Labor Examines Time Study Methods," Industrial Engineer, (March, 1944), p 4.
2. Lowry, Maynard, and Stegmerten, Time and Motion Study, p. 131.

metic mean is to be calculated. (1)

These selected element times are added together to give the selected operation time which is the base figure used to compute the standard time for the operation.

1. Ibid., p. 131.
   Barnes, Motion and Time Study, p. 208.

III DETERMINATION OF TIME STANDARDS (Cont.)

Base Time

Probably the most important step in the engineering part of time study is determining the relation between the actual times recorded on the observation sheet and those representative of a fair day's work. The time study is hardly more than a detailed time card until, by application of a rating or levelling factor, it is modified to represent the time required for a normal performance of the operation. (1) The application of this correction factor permits the use of a single study to determine the time standard by converting the results of this study to a level of productivity that might reasonably be expected from the average or normal worker. To assure fundamental validity the factor should be based on an estimate of the productivity of the worker in relation to some predetermined norm. (2) Within this framework of basic validity its acceptance will depend on whether the estimate is the result of an unorganized guess or the result of careful integration of carefully appraised factors. All of these subjective correction factors exist in default of true statistical analysis.

> "If it were possible to obtain a broad enough sampling of any operation there would be no need for anything but routine recording of time, for we could through this sampling obtain a complete picture...without having to resort to mathematical adjustment." (3)

The introduction of this wholly subjective element into what, up to this point, has been an objective procedure has engendered considerable

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1. Phil Carrol, Jr., Time Study for Cost Control (New York, 1943), pp. 60-83.
2. Presgrave, Dynamics of Time Study, p. 62.
3. Ibid., p. 52.

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opposition from labor and has motivated it to make various provisions in its ~~their~~ contracts to protect itself from unreasonable standards resulting from the application of these factors which they consider purely arbitrary. One such protective provision is the stipulation that only the average worker is to be studied; this removes the necessity for correcting the relative productivity of the worker studied, and thus permits this objectionable feature to be dispensed with. Another such provision is the retention of the right of review of all standards before they are put into effect on a permanent basis. There is some variation in the workings of this type of provision, some unions preferring to review the standard before it is applied to the job, while others prefer to wait until the standard has been in effect for a short period before they pass on its reasonableness. This protection is provided for by some unions by setting up a definite grievance procedure to be followed in the event that there is a disagreement over the correctness of a standard. Of these various types of clauses only the first is for protection from levelling or rating exclusively, the others have wider application and are directed as much toward assuring that adequate allowances are added to the levelled times as they are toward incorrect levelling factors.

There are two general methods in current use for the determination of the base time which form the basis for a number of different systems of expressing and applying the correction factor. The first of these is effort rating or estimation of operator speed in relation to some predetermined norm. Variation from this norm applied to the selected time as a correction factor gives the time in which an average worker would be expected to perform the operation. Care must be taken in this method to construe effort

so that it is directly related to speed by carefully eliminating all effects of skill, method, and working conditions. (1) This restriction is considered to be a major virtue of the system by Phil Carrol who maintains,

> "Effort is the only criterion that should be considered in rating because all other factors have to do with skill and effectiveness. To judge these latter factors requires a technical skill which is not possessed by the average time study man." (2)

These factors are taken into account by other methods by people who are properly qualified to deal with them.

Indorsement of this system of correcting the selected time depends on the acceptance of three basic premises. The first is that the speed of motion is a homogeneous quality that is subject to measurement and capable of being expressed in numerical terms. The second of these basic premises is that it is possible to assess this quality, speed of motion, by judgment in such a manner that the rules of measurement are adhered to. The third of these premises is that the ability to measure effort can readily be acquired by most people and used in the great majority of factory operations. (3)

The other general method of modifying the selected time to compensate for the relative productivity exhibited by the worker studied is termed levelling. This is distinguished from rating by the fact that it is an attempt to measure the determinants of speed--skill, effort, conditions, and consistency--rather than speed itself. Each of these factors is graded and a numerical weight is assigned to each grade--either positive

1. Ibid., p. 81.
2. Carrol, Time Study for Cost Control, p. 84.
3. Presgrave, Dynamics of Time Study, p. 81.

or negative depending on whether the grade is above or below average which carries a weight of 00.00. The grades for these factors are indicated during the time of the study by means of letter symbols which correspond to the various numerical weights that are used to determine the level at which the operator was working. Care has been taken on these numerical weights to keep the extremes within the range of individual differences of industrial workers as worked out by David Wechsler and others. By thus setting credible limits to the compensation that may be made, the strength of the method is increased. (1)

Labor's reservation in accepting standards based on these procedures is understandable when the possibilities of unscrupulous manipulation and innocent error are considered. From their standpoint the necessity for the time study man to employ such a subjective concept as average in arriving at a rating factor is a highly likely source of error. As long as verbal definitions of average are used in lieu of statistical ones, there will always be cause for doubting the accuracy of numerical terms that are dependent on them because of the extreme difficulty in conveying absolute meanings with words. (2) Notwithstanding that the error is unintentional, it is still a cause of unfair standards and a reason to be on guard.

A potential source of unintentional error that must be considered very carefully is the statistical basis of both rating and levelling. It is not at all a certainty that this basis can be rationalized convincingly or shown to conform to the rules of measurement; there are many who doubt

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1. Ibid., pp. 70-83.
   Lowry, Maynard, and Stegmerten, Time and Motion Study, pp. 118-123.
2. Presgrave, Dynamics of Time Study, p. 83.

that it can.

Not the least cause of this reservation is the ease with which standards computed by means of these factors can be adjusted to suit the desires of its users. The justification for this caution lies in the nature of the process of arriving at these factors. At best they are a product of the observer's honest judgment, but since they are incapable of being tested by any objective procedures, it is a simple matter to utilize them as a means of adjusting stadards to any desired level.

Although recognition of these weaknesses of time study by labor might appear to destroy its usefulness, this is not actually the case. It does, however,

> "establish a basis for a critical evaluation of the techniques's accuracy and make clear the great injustices which may be perpetrated in the name of time study." (1)

Most of labor recognizes that faulty as its techniques may be, time study is the best method of determining a fair day's work that exists at present. This being the case, they accept and take whatever precautions they can to prevent being harmed by it.

1. William Gomberg, "Labor Examines Time Study Methods."

Standard Time

It is generally acknowledged that there are a certain number of unpredictable delays that will inevitably occur in the shop during the course of a day's work. Some of these are avoidable it is true,but there are a great number that cannot be eliminated. Within this latter group, many of the individual delays are so minor that they do not warrant formal accounting, yet taken in total represent a considerable length of time which should be taken into consideration in establishing a time standard. The addition to the base time of allowances for these delays is the method by which the standard time is determined.

Allowances that are added to the base time can be divided into four main classes--personal, fatigue, unavoidable delay, and special. Although these allowances are of vital interest to labor, it is only possible to consider one of them, personal allowance, in general terms. The particular operation and the conditions surrounding it determine the amount of time that is appropriate for the other allowances. Although the personal allowance may be computed in terms of what the average person will require, even this allowance must be adjusted to special circumstances when working conditions are extremely difficult or the work is inordinately heavy. (1)

Fatigue in industry and consequently fatigue allowances are the subject of much study and controversy at the present time. Very little is actually known about counteracting the effects of fatigue. Many experiments have been conducted and theories developed concerning the cause, effect, and steps requisite to combat fatigue in industry, but because of the variety and

1. Barnes, Motion and Time Study, p. 280.

inconsistency of the results it has been impossible to develop any standard practice for dealing with it. Consequently, fatigue allowances are merely estimates of the time that should be allowed to prevent undue exhaustion of the worker. At present, these estimates in lieu of some more objective basis are based on the changes of productivity of the worker that can be attributed to fatigue.

Allowances for unavoidable delay are those made for such things as minor breakdowns in the machines, breakage of tools, receiving instructions, and unforeseeable delays of this nature. This allowance is usually determined by studying the operation for a reasonable length of time and then estimating the amount of time that should be added for these delays. However careful the study may be, this method, in the last analysis, is a subjective one with little statistical validity; as such it is open to criticism. This criticism is especially justified because of the existence of a technique, developed by R. L. Morrow, that is on firm ground from a statistical standpoint. (1) This ratio-delay study, as Morrow's procedure is called, depends on the compilation of a reasonably large number of random observations of whether the machine is operating or idle because of some unavoidable cause.

> "Then, as Tippet states, 'the percentage number of readings that record the machine as working will tend to equal the percentage time it is in that state.'" (2)

The difference between this figure and one hundred per cent is the delay allowance. This approach to the problem of fixing upon the delay allowance

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1. Gomberg, "The Relationship Between Unions and Engineers," p. 427.
2. Morrow, <u>Time Study and Motion Economy</u>, p. 176.

is advocated by Mr. William Gomberg of the International Ladies' Garment Workers Union. (1)

The last of the four allowances, special, is the least important of the group. It is more or less a catch-all device used to compensate for some peculiar circumstance surrounding a job. It is given to a machinist when he is required to handle unusual and difficult material or to compensate for extra fatigue that may be the result of having to work at a forced pace on a special job. Thus, although it may be important as far as the particular task is concerned, it occurs too infrequently to be important in the overall picture of time standards.

In the computation of standard time, as in the case of base time, there is much suspicion of the validity of the results obtained from the utilization of subjective procedures. But, since labor acknowledges that time study is the best method of measurement that exists at present, it has worked out a pragmatic solution to this apparent dilemma--acceptance of the standards with reservations. The provisions that apply to tentative acceptance of standards based on levelled time apply equally to the acceptance of the definitive time standard for an operation whether levelling is employed or not.

That a case for the total rejection of time study could be prepared is undeniable, but it is equally true that time study is the most accurate technique available for measuring a reasonable day's work. (2)

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1. Gomberg, "The Relationship Between the Unions and Engineers," p. 427.
2. Spencer Miller, Jr., "Labor's Attitude Toward Time and Motion Study," *Mechanical Engineer*, LX, ~~339~~ (1938); p. 338

Acknowledging this and recognizing the necessity for such a measurement, labor is in the position of having to present a superior system at the same time it rejects the present one to avoid the charge of irresponsibility. (1) It should not be inferred that this is the unanimous opinion of labor because such obviously is not the case. There are some unions, those in the building trades for example, who categorically reject time study; however, much of labor does not concur in this opinion.

1. Gomberg, "The Relationship Between Unions and Engineers," p. 426.

IV REASONS FOR LABOR'S RESISTANCE TO UNILATERAL DETERMINATION

The reasons put forth by labor to justify its participation in the setting of time standards may be traced back to a single source, the concern of labor for the welfare of the workers. (1) The individual reasons that are advanced for the necessity of participation are all instruments brought into play to achieve this purpose. It is for this reason that the denial of this right is fought against by so many unions; exclusion from participation is to them a barrier to the fulfilment of this aim. Thus, management claims to the contrary, participation is a means to an end not an end in itself.

Much of the necessity for participation arises out of the weaknesses of the methods by which standards are obtained. Despite management's claims that they are the result of engineering techniques and as such not within the realm of collective bargaining, labor feels that these techniques have very definite limitations which remove their results from the class of other engineering calculations. It maintains that the likelihood of inaccuracies, which would result in grossly unjust standards, is great enough to warrant their being removed from the exclusive jurisdiction of management and brought within the sphere of mutual action. The range of this mutual action varies from joint studies to the right to carry the disputed standards through the grievance procedure. Labor is not at all in agreement as to the most effective measure. This, however, is unimportant when viewed against the almost universal agreement that some action is ne-

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1. William Gomberg, "The Union Looks at Management Engineering," <u>Proceedings of the National Time and Motion Study Clinic</u> (Nov. 1 and 2, 1945).

cessary.

> "...Little recognition has been given to the fact that it is the worker's job and health. . . that will be affected. For this reason, he should be protected in his relations to change." (1)

Thus, it is more than the economic welfare of the worker that stimulates labor to seek for the removal of standards from the realm of unilateral control. Too much of everyday living is enmeshed in this issue to make it seem advisable for labor to allow the determination of standards to remain completely outside of its influence.

> "Labor's request is that included in the area of study should be the individual worker's preference and antipathies, the group's welfare and economy as part of the total picture." (2)

Further, labor takes the position that these considerations should be given as much weight as the qualities of efficiency and economy. Although at first glance these two groups might appear to be mutually exclusive, such is not truly the case. The results of recent studies in the psychology of industry and fatigue have revealed that these considerations have a very definite effect on the economy and efficiency of operations. It is impossible to state any definite relationship because of the incompleteness of current knowledge in these two fields, but that such does exist is becoming increasingly evident as study progresses. What their effect is on efficiency and economy is not the issue however, what does concern labor is the fact that the workers are not machines and, consequently, should not be treated as though

1. Spencer Miller, Jr., "Labor's Attitude Toward Time and Motion Study," *Mechanical Engineer*, LX, (1938) p. 290.
2. H. M. Hedges, "Time and Motion Under Collective Bargaining," *Advanced Management*, V, (1940) p. 90.

they were. Management's tendency to overlook the personal aspects of work has long been scored. In 1915, R. F. Hoxie, commenting on scientific management of which time study is an integral part, took the position that management's relations to labor were unscientific because it failed to consider all elements of a job with the result that the worker was being dealt with as if he were just another piece of mechanical equipment. (1) That this omission has been continued is evident from labor's sustained protest against it.

To effect the inclusion of these generally neglected elements a certain amount of reorientation of methods and practitioners of time study is necessary; there must be an abatement of managerial dictation in favor of cooperative approach. This requires the development of engineering data not only through contacts and conferences with other engineers and from textbooks but also through the dynamic cooperation of the workers who are being studied. It is not enough that the worker remain passive toward the study, he must have an active part in it. Another prerequisite for the inclusion of these elements is the acceptance of the right of the worker to v veto standards that endanger his health, standard of living, and other similar values. (2)

Another aspect of time study methods that lends itself to the support of those who advocate labor participation is that in a large number of cases no provision is made for the worker to think about his job and methods of improvement. Time study, as it is generally carried out, removes this

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1. Robert Franklin Hoxie, Scientific Management and Labor (New York, 1915),
2. Hedges, "Time and Motion Under Collective Bargaining," p. 90.

function from the worker and places it on the engineer and planning office. The effect of this is to relegate the worker to the position of an automaton with nothing but purely mechanical duties. This has been attacked both by organized labor and socially minded people outside of the labor movement as socially unsound; they feel that it is essential for the worker to bring his faculties to bear on the job in order that he may get mental stimulation and satisfaction from his labors. (1)

In addition to the intrinsic weaknesses of the method by which time standards are obtained, the execution of the time studies often leaves much to be desired. Properly employed these studies are a combination of

> "techniques and procedures demanding a trained and skillful personnel, careful and adequate preparation, and continuous application with no other motive than efficient industrial operation and fair compensation." (2)

Ideally these conditions are met, but practically there is considerable deviation from them. Many unions feel that time standards are used to get maximum amount of effort from the workers at the smallest possible cost in wages. Although this may be somewhat of an exaggeration, there is sufficient validity in the statement to justify labor in its request for some degree of jurisdiction over them. A further deviation that is frequently cited by labor is the use of time study technicians and engineers who are familiar neither with the job nor the industry. It is felt that people with these qualifications are not capable of arriving at an equitable standard because of their lack of knowledge of the peculiarities of the manufacturing pro-

1. Miller, "Labor's Attitude Toward Time and Motion Study," p. 292.
2. Kennedy, <u>Union Policy and Incentive Wage Methods</u>, p. 40.

cesses. (1) The workers contend that no one who is unfamiliar with a particular job is capable of predicting the variations in the quality of the raw material, the equipment, and other working conditions accurately enough to weight the base time properly to compensate for these factors.

Until about 1930 much was made of the fact that scientific management was a reversion to industrial autocracy and that it intensified managerial dictation to the point where it infringed on the rights and ability of the workers to present grievances. (2) Labor was excluded from so much that vitally concerned it that it appeared to be a definite to unionism. It left the union as a practically functionless organization by virtue of the fact that the system required almost absolute managerial control of all of the worker's activities.

Since most of these managerial activities were centered about the determination and administration of time standards, the objections to the system and the necessity for participation may reasonably be transferred to time standards. Much of the potency of these objections has been lost due to the power that has been acquired by the union and the fact that the right to form unions and engage in collective bargaining is now protected by law. Thus, with the status of unions assured these reasons lose much of their former pertinency.

One aspect of labor participation that tends to be overlooked is the fact that where time studies have been most successful the methods and objectives have been carefully explained in advance of any action the cooperation of labor has been obtained. Although all the advantage would seem to

1. Miller, "Labor's Attitude Toward Time and Motion Study," pp. 290, 338.
2. Hoxie, Scientific Management and Labor, p. 17.

accrue to management, labor has much to gain from standards that are successfully and amicably set. If time standards are obtained that are satisfactory to both parties without arousing ill feelings on either side, the good will generated brings dividends to both sides. The friendly settlement of so important an issue predisposes each side to adopt a reasonable attitude in their day to day relationship which is the primary desire of both parties.

Although the necessity for participation is generally agreed upon by labor, there is little agreement as to the extent to which it is to be engaged in or the means to be employed in this participation. Using the extreme cases for the sake of illustration there are two alternatives, complete active participation in which the union is the co-author of the standards and underwrites their correctness and absolutely passive participation in which the union passes on the acceptability of standards that are determined by management alone and applies for rectification of unacceptable standards through the regular grievance procedure. Between these extremes lie the great majority of the solutions to the problems of how and how much.

So much of their effort has been directed toward the settlement of grievances from too exacting standards that the unions are constantly searching for an equitable method of getting mutually satisfactory standards with a minimum of friction. The solution that a few unions have adopted recently is joint determination on an equal basis with management. (1) Although very few unions have made use of this plan, it has much to recommend it from a practical standpoint, since sooner or later labor is going

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1. "Some Problems in Wage Incentive Administration," Studies in Personnel Policy #19, National Industrial Conference Board, (1940) p. 16.

to have to abandon its present policy of always demanding more and discuss standards with management on some logical and concrete basis. (1) Paralleling management's efforts from the outset serves not only to bring the discussions onto common ground and hence enhance the chances of reaching agreement but also to save a tremendous duplication of work.

Essential to the proper functioning of this plan is the adequate training of the union time study stewards on whom the actual task of time study falls. The usual course given for union representatives by management or management-oriented schools amounts to hardly more than a course in the clerical techniques of time study with no examination of the assumptions on which these clerical operations are based. (2) The almost inevitable result is that the union stewards, because they are obliged to accept the management's techniques uncritically, corroborate the standards that their technicians have obtained. Thus these stewards have become little more than company representatives in the union, often to the point where they sponsor questionable practices. (3) Obviously, this situation is a bar to a coequal determination of standards.

To insure that this situation does not arise, the unions should conduct their own training courses in which a critical examination of the underlying assumptions on which time study is based as well as an exposition of techniques should be included. (4) The resultant broader understanding will immeasurably strengthen the steward's ability to make con-

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1. Gomberg, "Union Interest in Engineering Techniques," p. 364.
2. "Economic Fundamentals of Collective Bargaining," Personnel Series #103 American Management Association, (1946) p. 36.
3. Gomberg, "Union Interest in Engineering Techniques," p. 364.
4. Ibid., p. 364.

structive criticisms and uphold the union's interests. Further, by enabling them to make independent studies using their own techniques, it is possible for the stewards to establish criteria by which they may measure management's standards. Without this knowledge all that can really be judged is the mechanical and arithmetical accuracy that was achieved.

The tremendous prejudice that exists among the rank and file of workers against time standards and the suspicion with which they look on all management engineering techniques makes some form of union security provision--closed shop, union shop, maintenance of membership clause, or some other--essential for the success of this type of participation. Few unions could get this plan adopted initially, and even these few would probably be obliged to abrogate this section of the agreement or face destruction by the withdrawal of dissident members unless it were afforded some measure of security while the workers adjusted to the new role which the union was playing. (1) Furthermore, if union membership is not a condition of employment it is highly probable that the existence of the union would be constantly threatened by workers who had become disaffected by being told that their complaints about standards were unjustified.

In addition to this very real danger that threatens any union that assumes the responsibilities incumbent on joint participation, there are other difficulties in full union participation. One of the greatest is the lack of resources of the average union which prevents it from matching industry in the highly specialized personnel required. They have neither the time nor the money necessary for adequate time and motion studies.

1. Ibid., p. 364.

Moreover, even if they did have such resources there are very few managements who would recognize the average union representative as qualified to criticize their work. (1)

Without even considering the operating difficulties of such a plan, some leaders reject it on principle alone. They feel that it is not within the province of a labor union to cooperate on that level. It appears to them that adequate protection is afforded labor if it has the right to question, investigate, or negotiate any standards that appear to be oppressive; closer cooperation than this seems to exceed the functions of the union. (2)

Denial of the objective character of time studies and rejection of partnership in standard determination does not mean that the union cannot make good use of men qualified by training and experience to meet management engineers on their terms. In certain industries, those that are traditionally on a piece work basis, the subject of standards must inevitably arise in one form or another; it is here that such men are invaluable. A few of these unions, notably those in the clothing industry, maintain a headquarters staff of men who qualify as engineers in their industry to aid the locals in this phase of their contract negotiations. These men are primarily trouble shooters who are only sent out when the situation demands it. (3) The availability of this staff permits the locals to avoid joint determination and still derive many of the benefits that would result from it.

The vast majority of unions that eschew direct participation in standard determinations resort instead to the regular collective bargaining

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1. Kennedy, Union Policy and Incentive Wage Methods, p. 150.
2. Ibid., p. 151.
3. Ibid., p. 157.

for their protection from inequalities. The devices used in this framework are extremely diverse. Some are completely passive in nature providing for nothing more than appeal through regular grievance channels for the adjustment of standards that appear to be unsuitable. Others, considering that such a specialized subject requires separate and specific treatment, develop detailed plans specially adapted for the purpose. Between these passive measures and the extremely active ones described above there are many gradations. These manifest themselves in the various detailed clauses applying to time studies that are inserted in the union contracts.

Those who are not reconciled to joint participation in standard determinations and yet wish to take an active part in their establishment accomplish this by such means as having a steward present during the study, or reviewing the data and computations before the rate is installed. Sometimes unions of this persuasion, instead of having the department stewards involved in this issue, will have all proposed studies and results explained to the chief steward who discusses them with the engineers before they are put into effect. (1)

Probably the most common method of supplementing the general collective bargaining control of standards is the introduction of clauses which regulate the time, manner, or conditions under which the studies are made. These clauses specify such things as the operator to be studied, allowances that must be made, operating conditions that must be maintained, in fact they may cover any phase of standards that is considered essential to the development of fair tasks. (2) In addition to this application, these

1. Ibid., p. 207.
2. Chapter V, this study.

same clauses may be found in conjunction with some type of supervisory clause.

In some of the industries in which standards are customarily settled through the regular collective bargaining processes, arbitration has become an important means of determining these standards. The Massachusetts boot and shoe industry has taken its piece rate disputes to the State Board of Conciliation and Arbitration for settlement many times. This board engages experts to study the problem at first hand and make recommendations which are then used as the basis for the Board's decision. The clothing industry, in those centers where arbitration is accepted, uses a slightly different procedure. Instead of using a state agency as arbitrator an Impartial Chairman's office is used to perform the same function. The same device, an impartial board selected by both labor and management in the industry, is utilized by the full fashioned hosiery industry. Although other industries occasionally arbitrate their differences, it is only in these industries that it is an integral part of the solution of the standards problem; however, there is a continuous effort being made on that portion of labor to whom arbitration is unavailable for its acceptance.

To labor this acceptance of arbitration as the final step in bargaining means that disagreements will be settled on the basis of merit rather than on economic strength. It gives them the assurance that deadlocks will finally be resolved by a competent impartial judge after careful examination of the facts rather than by any form of force. Although the decisions may not always be in its favor, at least it will have the assurance that management's claims have been justified by the facts and not convenient fictions.

In some respects this approach to standards affords the same pro-

tection as active participation. This is especially true when the arbitrator conducts his own independent investigation, since in this case a second party parallels management's work and checks it step by step. Even when no independent study is made, the standards are subject to modification by someone other than management. Thus many of the major benefits to be derived from direct participation may be garnered from this procedure as well.

V PROTECTIVE MEASURES TAKEN BY LABOR

As indicated by the preceding material, there are many approaches to the subject of production standards. The clauses that follow are a representative group gleaned from actual contracts and illustrate specific actions that have been taken by various unions on the subject of time standards. They represent a compromise between labor's desire to reject time study on the basis of its fallibility and its recognition of the fact that it is the best method extant for the determination of a fair day's work. The reluctance to accept any time standard as final is clearly shown by provisions for trial periods, procedures for altering them, and observation of the studies as they are being made. It is through these mechanisms that labor reconciles its acceptance of time standards with its knowledge of the weaknesses in the method used in arriving at them.

The first example, while not adhering to the principles mentioned above, is by no means a rarity. Many unions still resist the use of time standards and wherever possible prohibit their introduction. Such is the case with the Metal Trades Department of the A. F. of L. in their contract with the . . .Shipbuilders on April 23, 1941 which simply states that,

> "There shall be no contract, bonus, piece or task work, nor shall there be a limit on, or curtailment of, production. . . " (1)

Quite the opposite approach is used by the Coleman Employees Federation, an independent union, which accepts both time study and bonuses. They, however, retain the ultimate control over the standard by stipulating what

1. "Collective Bargaining Developments and Representative Union Agreements," p. 27.

[illegible]

[illegible]

[illegible]

> [illegible]

[illegible]

the relationship shall be between the time required by the average worker and the standard. These are provided for in the following extracts from Article XIII, Section 1 of their contract with the Coleman Lamp and Stove Company.

> "The Company agrees it shall establish and . . . endeavor to maintain all production base rates at a point which will enable the average . . . worker to earn on the average a twenty per cent bonus without undue or injurious physical effect.
>
> "The Federation agrees that all production workers shall cooperate fully with the time study men in order to . . . determine the necessary time required to properly perform each production operation.
>
> "Time and motion studies. . . may be taken when and as often as may be deemed necessary by the Company. (1)

The union, in order to protect itself from having the standards cut after they are established satisfactorily, included in this section a very common provision which states the circumstances under which the standard may be changed.

> "It is further agreed that after an operation has been fairly stabilized as to method and has been time studied a second time the production base rate shall not be changed except:
>
> 1. . . . an obvious clerical error... .
> 2. A change in condition or method has occurred since the job was last studied and base rate determined that may reasonably be thought to have affected the job.
> 3. A request for restudy is made by a workman, as hereinafter provided. (2)

The Rubber Workers Union Federal local # 21914 (A. F. of L.), while making no specific provisions for the possibility of grievances arising from standards, did include in their contract of January 1943 with the Hood Rubber Company both the right to observe the time study as it is being

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1. Ibid.
2. Ibid.

made and the right to inspect all data and computations used in the determination of standards. By making no special provision for the settlement of disputes arising over standards the union does not deny itself the right to carry its disputes through the grievance procedure, it merely indicates that it does not wish to set up special procedures or restrict itself as to how or when they may be taken care of. Many unions have adopted this course of including the settlement of such disagreements in their general grievance clause.

Less reservation in the acceptance of time study methods and principles is indicated by this clause than any other that will be mentioned; the only requirement that it makes is that future studies shall be made in conformance with present practices. To insure this, the right to examine or observe the taking of the data is provided for.

The specific material pertaining to time studies is contained in Article III of the contract.

> "Section 3. (a) All labor time standards shall be established in conformity to present time study practices of the Company. These practices require that fair consideration shall be given to the requisite quality of workmanship and reasonable working capacities of normal employees.
> (b) Labor time standards . . . available in the department . . . in which the operation . . . performed.
> (c) Any steward . . . shall upon request to his foreman be present at and observe any operation being time studied for standards . . . The Standard Department Supervisor shall, at the request of the steward, review with him the data and computations on which any standard is based . . " (1)

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1. Ibid., p. 11.

The United Auto, Aircraft, and Agricultural Implement Workers of America in its contract with General Motors in 1943 adopted a different approach to the problem of protecting its members from unjust standards. Rather than trying to specify the level at which it may be set, the union reserves for itself the right to challenge any standard that appears to be unfair. For this purpose it sets up an elaborate grievance procedure dealing exclusively with the adjustment of standards. By accepting the general principles of time standards and not setting any positive requirements the union is in a position where it may challenge any standard, regardless of its theoretical correctness, without being open to charges of unreasonableness. Among unions that feel that any participation in rate setting decreases their ability to protect their members this is a favored type of clause. (1)

Acceptance of time study as the means to be used in determining job loads is expressed in such general terms that they are committed to uphold no standard.

> (78) "Production standards shall be established on the basis of fairness and equity consistent with quality and workmanship, efficiency of operations, and reasonable working capacities of normal operators. The local management of each plant has full authority to settle such matters."

The details of each step as well as the order in which they are to be invoked are carefully set down in the clause.

> (79) "When a dispute arises regarding standards established or changed by the management, the complaint should be taken up with the foreman. If the dispute is not settled by the foreman, the committeeman for that district,. . . , examine the job and the foreman or time study man will furnish him with all the facts in the case. If there is still

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1. S. T. Williams and Herbert Harris, Trends in Collective Bargaining (New York, 1945), p. 4.

> a dispute after the committeeman has completed his re-examination, the foreman or time study man will then re-examine the operations in detail with the committeeman on the job. If the matter is not adjusted at this stage, it may be further appealed as provided in the grievance procedure. (1)

A similar negative approach to time standards is evident in the December 2, 1942 contract of the United Steel Workers of America with Jones and Laughlin Steel Corporation. Here too, the entire section devoted to time standards is concerned with settling disputes rather than specifications to be met in obtaining them. The role or challenger is reserved for the union in both contracts; it is only in the procedure that differences occur.

The first of these procedural modifications is the provision for a trial period for the standard before either the union or the company can invoke the grievance procedure to modify it. This is a logical concomitant of the general attitude of passive acceptance of standards since it makes the acceptance of each standard dependent only on the results of its application. By requiring each standard to stand on its own merits the union is unhampered by the necessity for finding the specific flaw in a standard that makes it unacceptable. A course that it would be obliged to follow in order to maintain its good faith if a particular method of obtaining the standard were specified.

The establishment of an impartial umpire as the ultimate authority in the settlement of disputes over standards is the second of the procedural variations. Since his sole concern is a prompt and unbiased solution, reason rather than economic interest may be assumed as the basis of his decisinn.

1. "Collective Bargaining Developments and Representative Union Agreements," p. 50.

Use of a trial period is especially appropriate when an umpire is provided because it tends to keep the discussion before him on a factual basis.

These various features pertaining to standards are contained in Section 11 of the contract.

> 1. "When a bona fide new job or position is established-- (a) Management will develop an appropriate rate by regular procedures in effect in the Corporation for its industrial engineering and industrial relations activities . . .
> (b) Such procedures having been conformed to, the rates may be established by Management to cover the job or position in question. The Union Grievance Committeeman or Committeemen . . . and employees to be affected shall be informed by Management in advance concerning such rates.. . . The rate having been established may subsequently be subject to adjustment as provided . . .
> (c) If after reasonable trial period . . ., grievances are alleged by either employees or Management concerning such rates--which grievances cannot be satisfactorily adjusted by mutual agreement--the question as to the equity of such rates in relation to the plant rate structure and the requirements of the job. . . as established by sound industrial engineering procedures . . . may be appealed to an impartial umpire. . . , but no formal grievance may be presented . . . until a reasonable period . . . since the installation of the rates and operation of new equipment, which period will permit of study and adjustment, if necessary, of the rates to the varying conditions of operation. . . (1)

The Textile Worker's Union of America in its contract of June 19, 1943 with the New Bedford Cotton Manufacturer's Association, used very similar tactics in protecting its members from unfair time standards. Except for the omission of a special provision for an impartial umpire as the arbiter of disputes arising over standards, the two clauses are parallel.

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1. Ibid., pp. 59, 60.

Article VI. Wages

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> C 7 (b) "Tentative Fixing of Piece Rates for New Types or Methods of Work--Where new types of work are introduced into a particular mill . . . , the employer may set up temporary piece rates. Piece rates so fixed shall not become established until the expiration of a period not more than four (4) weeks from the time the product or construction was first put into the process of manufacture in the jobs affected.

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Article VII. Work Assignments

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> 3. "Changes in Work Assignments -- The employer shall have the right to install new work assignments or to change existing work assignments. Whenever the employer desires to install new work assignments he shall give notice to, and hold available for, the Union a report descriptive of the work assignments. At the completion of a survey embracing operating and time studies . . , all data concerning the work loads, piece work rates, and abse rates shall be entered on a form prepared for this purpose . . . Every effort should be made to reconcile differences before installation of a new or changed work assignment.

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C. Trial Periods

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> "Any grievances concerning a work assignment set as the result of a trial period shall be made within fifteen (15) days following conclusion of the trial period or shall be considered abandoned." (1)

These clauses, by no means an exhaustive collection, serve to illustrate the wide range of possibilities that is available to the union in writing a time standard clause. Depending on the attitude of the union and the strength of its bargaining position time study may be rejected, whole-

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1. Ibid., pp. 64-65.

heartedly accepted, or accepted with limitations and restrictions. Since it is a part of the collective bargaining agreement, the clause is usually a compromise between the union's desire to reject or control the standards and management's desire to exercise complete freedom of action.

Although the various protective clauses directly applying to time standards can be written down, there is one problem intimately connected with standards that is practically impossible to reduce to contractual terms. When is a job sufficiently changed to warrant a new study and a new standard? This problem is aggravated considerably by the fact that retiming is one device used by management for the purpose of reducing standards. The device commonly adopted to justify this retiming is to change the job in some minor respect so that there is an apparent excuse although from a practical standpoint it may be negligible. Once this justification for retiming is established, by a manipulation of the computations the standards can be changed to suit the needs or desires of the management. All labor is suspicious of retiming because of these circumstances and bitterly resists any retiming unless the job is changed to a very considerable extent. For this reason it is very common to include in the agreement a clause to the effect that no change in standards will be attempted unless there is a distinct change in the method or equipment of the job. This type of clause, although it may bring the issue into the open, does little to solve the actual problem because of the extreme difficulty of defining exactly what constitutes a real change. Labor has all too many instances of changes that were made solely for the purpose of evading the clause and getting new lower standards. (1)

1. Kennedy, Union Policy and Incentive Wage Methods, pp. 212-213.

The problem is one of distinguishing between a revision of an old standard and the setting of a new one. (1) No one denies that there is often justification of setting these, it is inevitable in a competitive economy that new and more efficient methods will be developed, many based on previous methods. Most of labor agrees that new standards are justifiable in these cases, their grievance is with the restudies that are made on jobs purely for the sake of lower standards, justified by a veneer of change that is not real. (2)

Because of the impossibility of satisfactorily defining a change much time is spent by management and labor in clearing up individual cases. Labor's extreme sensitivity and tenacity on this point is quite understandable when one considers that any change in the standard has an immediate effect on the earnings of the workers. (3)

A common type of clause that affords general protection is one that specifies that new standards will be set into effect only after they have been agreed on by both parties, these are just measures to assure that all standards are within the area of collective bargaining. What is actually accomplished in the ensuing discussions is dependent on how strongly the union feels about the standard at issue and the confidence that each party has in the good faith of the other. (4)

By far the most common type of safeguard utilized by labor is the non-specific clause which provides for carrying disputes over standards

1. Ibid., p. 212.
2. Ibid., p. 212.
3. Ibid., p. 211.
4. Ibid., p. 202.

through the regular grievance procedure for settlement. Even in those cases where the union has a representative in the time study department or where it has included in the contract the right to observe and review all time studies, the usual procedure is to resolve differences of opinion that may arise through the regular procedure. (1) Often, however, there are supplementary prohibitions and requirements that are imposed by labor for additonal protection. These are usually aimed at regulating the circumstances surrounding the study--time, manner, or conditions under which it is made. (2)

When the timing is to be done, both in the case of the original study and the restudy of an operation, is of extreme importance to both labor and management. If the initial timing is done before the operation is running smoothly, the rate will be too high; on the other hand, if it is delayed too long the worker is deprived of the benefits of his increased efficiency by an unduly tight standard. For this reason the type of clauses that follow are often inserted in the contract.

> "Piece rates shall be established not later than 30 days after the start of production on any new job, such rates shall be subject to review and negotiation by the union not later than 60 days after the start of the job." (UAW - Studebaker) (3)

A similar clause which states the situation even more clearly:

> "It is understood that operations will be time studied as soon as they are running efficiently . . . the company will be allowed 4 working days to get an operation running efficiently, except on major changes done on lines,

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1. Ibid., p. 189.
2. Ibid., p. 241.
3. Ibid., p. 243.

> when they will be allowed a total of 10 working days."
> (UAW - Willys-Overland) (1)

In the case of retiming, in order to prevent the worker from being kept on his low rate by the management's stalling, they specify a definite time within which the restudy is to be made after the request has been received.

Conditions to be maintained or avoided and factors that must be considered are often included among these supplementary clauses, frequently as the result of previous disagreements with management regarding a particular point. One of the most detailed clauses concerned with both of these considerations is contained in the agreement of August 1939 between the United Auto Workers (C. I. O.) and the Willys-Overland Motors, Incorporated:

> "In timing all jobs, the time allowed for performing an operation shall be the time necessary for the regular operator familiar with the operation. The tools, equipment, the material provided and the quality of the finished part up to the standard required by the inspection department, without causing excess scrap, or undue damage, wear of tools and equipment, with operator working at a pace he can maintain day after day without injury to himself or his fellow employees; with such time allowed to replenish the supplies, oil, and clean the equipment, and all the details that are necessary and which are expected to occur in the ordinary day's work. Those are classed as contingencies and a percentage shall be added to the time allowed to take care of them. In addition, 10% of the time allowed for actually performing the operation shall be added for personal contingencies." (2)

A less detailed but more common type of clause is that found in the United Rubber Workers - Continental Rubber Works contract of September, 1941 which covers just one aspect of the study:

> "When practical, time studies will be made on experienced operators who regularly perform the work . . . Time studies on such operators will be used in determining their average. The same applies to rechecks. When one operator is

1. Ibid., p. 244.
2. Ibid., p. 247.

> time studied more than once, all studies will be used in determining the average output for the operator." (1)

To insure that specific allowances are applied to the base time, some unions specify in the contract the values that are to be used for such factors as fatigue, personal time, and set up time. Among the unions that adopt this course there is a wide variation in application, even among locals in the same international union. Some stipulate exact amounts while others just indicate that some allowance should be made; some enumerate all the allowances while others just those that they consider essential; there are even variations in the value assigned to a particular allowance in different plants organized by the same union. (2)

Although this type of clause is undeniably effective and used by some unions, the non-specific clauses have, on the whole, gained greater currency and afforded more protection to labor.

> "Considering manufacturing industry as a whole, unions probably accomplish more for their members in the way of checking abuse and correcting maladjustments through ordinary collective bargaining than through more direct forms of participation and control." (3)

1. Ibid., p. 245.
2. Ibid., p. 247.
3. Ibid., p. 187.

VI THE CLEVELAND GARMENT INDUSTRY - THE EPITOME OF COOPERATION

To understand better the high degree of cooperation that was achieved in the case that will be cited, it is necessary to recognize some of the background factors which helped bring it about. The initial wholehearted cooperation and equal participation are set against a background of bad economic conditions. The Cleveland garment industry episode occurred during the recession of the early 1920's during which the union was faced with the fact that its presence caused a labor cost differential which put the employers in a bad competitive position thereby endangering the livelihood of the union members by limiting their employment opportunities. Thus the alternative to cooperation in finding a way to remove this competitive handicap was destruction of the local union and the employer's business, an occurrence which was not at all uncommon where either one or both of the parties remained adamant and refused to make concessions.

The Cleveland Women's Garment Industry (1)

With the onset of the depression which followed the boom conditions of World War I the unions found themselves faced with hostile managements just waiting for an opportunity to destroy them. One of the prime reasons for this desire was the fact that despite the big slump that had occurred in prices the unions were insisting that no wage reductions should be made. Their success in maintaining this policy put the employers in a very precarious competitive condition because the non-union establishments were able to make large cuts and thus maintain their profit margins more or less intact in the face of the large price drops that had occurred. This being the situation, it was felt by many unions that it was incumbent upon them to try to establish better relations between them and the employers through the reduction of the cost differential by cooperation in the elimination of waste and the increase of production.

Until the end of 1919 the international union in the garment industry had been attempting to substitute timework for piecework as a basis for wage payment. In 1919 there had been strikes in most of the principal producing centers to gain this end; a strike had been averted in Cleveland by arbitration which gave the workers an increase in wages but did not abolish piecework. During the life of this contract, a period of six months, a marked change took place in the relations between the employers and the unions. The employers decided to abandon their attitude of antagonism toward the unions and accept collective bargaining; the unions reconciled themselves to the principle of scientific management. (2)

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1. Slichter, Union Policies and Industrial Management, Chap. 14.
   The historical facts are Slichter's.
2. Louis Levine, The Women's Garment Workers (New York, 1924), pp. 360-370.

At the end of this period a new contract was negotiated which provided for a system of production standards instead of the union's timework or the employer's piecework. To determine these time standards, the use of elemental time data was decided on as the only practical method. This method entailed the collection and recording of the time for the individual elements in the various operations and keeping the fixed and variable elements separate. Times were determined for these variable elements under the various conditions that caused the variance such as the length of the seam, the type of material being worked, the various styles, etc. so that elemental times were available for the majority of elements under most conditions. Since it was not possible to get times on all the elements that might occur, when an element appeared in an operation on which there was no time, the operation was completely time studied to get this time. The method used in obtaining the fixed times was exactly the same, however the problem was much simpler since there were many fewer possibilities and by definition these were unchanging. After collecting and recording these times, it was a relatively simple matter to determine the time standard for an operation--a matter of breaking the operation in question into its elements, looking up the times for these elements, totalling them, and applying the various allowances decided upon. This was a compromise between the two antithetical systems proposed originally and was indicative of the change in attitude which had taken place during the previous six months. It seemed to promise the reconciliation of the conflicting interests of the employers and employees and a remedy for the arbitrariness of wage bargaining.

1. Ibid., p. 370.

The employer's acceptance of this system can be understood if it is considered in terms of what their alternative was, timework, a system which they were very anxious to avoid. Labor's acceptance may be attributed to their realization that reduction of the cost differential was essential if the Cleveland area was to compete with other producing areas that were less unionized and hence able to get cheaper labor, in addition to this was the realization that the timework basis in the large factories would cause much of the work to be subcontracted to the small shops over which the unions had much more tenuous control. The standards of production were accepted as a compromise which avoided the evils of piecework and yet did not present the employers with the burden of timework.

The system of time standards as adopted by the manufacturer's association and the union on June 23, 1920 was one in which the various jobs were assigned a standard time determined by time study and the workers were paid at their regular hourly rates for the time represented by the number of jobs they did and a guarantee of 90% of base wage was made for time spent waiting for materials. The standards were to be set and administered by a Bureau of Standards maintained jointly by the union and manufacturers and responsible to the Board of Referees.

To put this system into operation an organization was constructed for installing and operating the standards consisting of at least one time study man for each plant, a joint approval committee for each plant, a Bureau of Standards, and a supervisory committee on standards. The time study men were made responsible for gathering data and constructing tentative standards; these time study men were theoretically impartial men hired and supervised by the Bureau of Standards, although actually they

were employees of the manufacturer subject to dismissal by him. The tentative standards were submitted to a plant approval board, made up of representatives of the workers in the plant and the manufactureres, at approval meetings where each side was given the opportunity to accept or reject all standards. Deadlocks occurring during these meetings between the time study men and the committee were submitted to the Bureau of Standards. This Bureau of Standards was responsible for all the technical work in the installation and operation of the standards. Within this general framework of responsibility were the functions of selecting and training the time study men, planning for the collection of data, standardizing time study procedures, deciding on questions of a technical nature, assuring that standards were equitable in practice, deciding disputes about standards, and handling complaints about the work of time study men. Any decisions of this board might be overruled by an agreement between the manufacturers and the union, or by the Board of Referees, the supreme appeal board in the market. The character of this bureau changed several times during the life of this cooperative venture. Initially it consisted of a supervising engineer, but the union, dissatisfied with having just one theoretically impartial expert, requested and was granted a change whereby two engineers, one representing the union interests and the other those of the manufacturers, composed the Bureau. This arrangement worked out very poorly because of the inability of the engineers to agree. Consequently it was necessary to change again, this time the services of experts were dispensed with and the Bureau, whose name had been changed to the Joint Bureau of Standards when it was changed to a bipartisan group, consisted of manager of the manufacturers association and the manager of the union.

The supervisory committee on standards made up of five men from the union, five men from the employers, and the engineers in charge of the installation of the standards was the policy determining body and governed in a general way the activities of the Bureau of Standards and the time study men. This committee was only active for a short time during the organizational period, after that the Bureau was able to take care of all questions that might have been referred to this committee.

In order to be able to set standards based on time study there were several points on which it was essential for the union and the manufacturers to come to an agreement. The first point was the speed at which work was to be done; this was decided to be based on the average output of the average worker working under pre-standard conditions. Second was the question of the proper method of work to be used as the basis for the determination of the time standard; it was decided that the method was to be an average one that was in use in the shop, the union's position on this point being that unless the manufacturers assured them that they were prepared to teach the best method to all the workers that basing the time on the best method would be unfair; and in addition, using the best method would deprive the better workers of their traditional right to improve the method and make more money. The next question that had to be solved was whether the averages referred to should be shop or market averages. Market averages were decided in the case of the speed work because this procedure would tend to put the different shops on a competitive basis and at the same time deter the manufacturers from speeding up their workers so that they could claim that the standards were set too loosely and should be revised. The methods of work, on the other hand, were based on shop averages because of

the impracticability of using market averages.

> "In general the selection of methods of setting standards in the Cleveland garment industry was guided by three principal considerations: (1) the desire to base standards upon the speed and methods of work that had been achieved under bargaining; (2) the desire to equalize competitive conditions among the several shops; and (3) the need for a method that was largely independent of style changes and that could be quickly applied at the beginning of each season to new lines. It was the last consideration which led to the use of element times,. . . (1)

After the principles had been agreed upon by negotiation between the employers and the union, the problem of introducing the standards into the shops had to be faced. These problems were especially acute in those shops where the rates had been bargained up so high during the war and the years immediately following that the institution of the standards resulted in a wage reduction; opposition arose to the standards at many points. The standards by not including time that had to be spent waiting for the garments seemed too low to the workers in terms of money when they viewed from the standpoint of their old rates which had included payment for delays in getting the work. They disregarded the fact that in addition to the standard they were guaranteed 90% of their base rate for any time they spent waiting for work. Another cause for opposition was the fact that customary differential between the prices on high and low priced garments was not maintained;under the old bargaining system the employers had given considerably more for the higher priced garments so that they could get low rates on the lower priced ones where small differences in cost gave them large competitive advantages. Further opposition was met because there was no difference

1. Slichter, Union Policies and Industrial Management, p. 404.

made for the size of the lot, although large lots, by reducing the amount of time necessary for change-over, allowed a worker to produce faster. This acted as penalty on the workers producing higher priced garments that usually came in smaller lots than did the lower priced ones. Another difficulty encountered in introducing the standards of production was the unwillingness of the employers to assume the responsibility of ensuring that the machines were kept at a high rate of efficiency and that there were no unnecessary delays caused by faulty cutting, parts missing from bundles, inefficient movement of material to the workers, etc.; this type of difficulty made its appearance because neither the methods of management nor the conditions of work were adapted to standards.

With the inauguration of this system of production standards, problems in various phases of operation arose. These problems were, for the most part, manifestations of the workers' distrust and dissatisfaction with the system of production standards; in some cases, however, they were due to inherent weaknesses in the system as it was constituted. This dissatisfaction and suspicion manifested itself quite strongly in the attitude and actions of the workers in the approval meetings, which often degenerated into a bargaining session rather than discussion of the correctness of the standards from a technical standpoint as had been originally intended. To a certain extent the failure of these meetings could be attributed to the failure to educate the workers to think in terms of time rather than money and the failure to give the methods wide enough publicity. As a direct result of this lack of understanding of the method much unnecessary antagonism was generated by arguments over the time values assigned to various garments.

The question of control of the studies and of the time study men was another problem which caused a good deal of dissatisfaction among the workers. The various changes that were made in the Bureau of Standards, as mentioned above, were indicative of this feeling. Further evidence of this condition is shown by the dissatisfaction caused by the system of paying the time study men--the workers found it difficult to believe that men who were paid by the employers and dependent on them for any promotion could remain impartial.

Still further discontent was engendered by the fact that previous to their six weeks training course for this job, the time study men had had no connection with the garment industry. The workers felt that greater familiarity with the industry was necessary before truly accurate standards which gave proper weight to the many intangibles could be gotten.

A whole series of problems were created by the failure to develop indisputable and objective methods of procedure. Although it was agreed to time the average worker, the concept of average was left so vague that there was much disagreement on this score. Another omission was that of standardized methods for treatment of the readings and application of allowances. This laid the standards open to the criticism of arbitrariness and further strengthened the workers' claim that no man unfamiliar with the industry could produce a fair standard. By allowing the time study men in the various shops to work independently with no attempt at comparison of their methods of making studies, uniformity, one of the fundamental reasons for the adoption of the system, was neglected. A further blow was dealt to uniformity by inadequate maintenance of pro-

duction records which prevented standardization of method and periodic review of data for the purpose of correction. (1)

The workers' dissatisfaction with the time standards created still another problem by leading them to distrust the basic data from which the standards were derived. This problem was aggravated by the fact that there was no committee of workers in any of the shops that was capable of criticizing the element times on a rational and constructive basis; thus, although the distrust in some cases was justified, no constructive suggestion or demands were possible because of the intangible nature of the reasons for this distrust.

The greatest difficulties in applying the standards arose over the building up of standards from the element times. The most important of these was the detection of the many ways that the workers lost time in the execution of the various elements: that this could only be done through many observations was acknowledged, but because of the lack of time was often neglected. In this respect handling time, a very important element, was especially hard to standardize because of the amount of unaccountable variation not only between workers but also for the same worker at different times.

Another problem in the building up of standards was the inability to allow for style changes; this difficulty arose because of the difficulty in defining precisely what constituted a style change. This definition was necessary in order to distinguish between a minor change which would have no appreciable effect on the time and style change which would require a

1. Levine, The Women's Garment Workers, pp. 370-379.

revision of the standard.

Although these difficulties were overcome and fair standards set, at the end of the first season of operation the workers were firmly united in their desire to be rid of the standards. Close analysis disclosed that they had no specific complaint about the standards, but rather that they had failed to adjust to the post-war level of wages and resented having to accept a reduction from the inflated war time level. This resentment reached such proportions by the date for the renegotiation of the contract that they instructed their delegates to sign no contract that provided for a continuation of the standards.

The manufacturers also had their grievances against the system--they wished to be rid of the forty week employment guarantee and to return to piecework. Thus the negotiations soon became deadlocked with the major issue retention of production standard or return to the old system of bargaining the piece rates. This deadlock was finally broken on December 27, 1922, by a compromise in which both the standards of production and the employment guarantee were preserved; the former, despite the opposition of the rank and file, was retained by the union manager because of his belief in the principle. In addition to several clauses desired by the manufacturers, the agreement contained two concessions to the union. The most important of these was the reconstitution of the Bureau of Standards so that it contained two engineers, one employed by the union and the other by the manufacturers; with this change the Bureau became known as the Joint Bureau of Standards. The second change was the the jurisdiction over the time study men was handed over completely to the Joint Bureau.

The dual control of the Bureau, which the union considered to be

its major victory, failed utterly to achieve its purpose--to increase the workers' confidence in the standards and to improve the operation of the standards. The only real effect this change of control had was the cancellation of the Bureau as an effective organization, the result of the inability of the two partisan engineers to agree on anything. Much of this inability to agree could be attributed to the union engineer who, while making admittedly valid criticisms of the basic data and administration of the standards refused to go out into the shops and try to adjust disputes maintaining that it was senseless until these faults were corrected; this attitude although logically defensible, was impractical because the adjustment of disputes offered an excellent starting point for finding faults and initiating corrective measures. A further obstacle to the functioning of the Joint Bureau was the insistence of both engineers on accurate standards which served to prevent the few discussions that did take place from accomplishing anything.

This destruction of the Board's ability to supervise the production standards directly responsible for the eventual abandonment of this unique experiment. This is quite fully borne out by various investigations that were made of the plan. Both the union and Mr. Francis Goodell found in their studies of the system that there was a lack of uniformity in procedure and administration of the standards and a few weaknesses in the basic data. Both of these complaints could have been remedied if there had been some central impartial supervisory agency with jurisdiction over the time study men. This was rendered impossible by the transformation of the Bureau into a distinctly partisan organization with each of the members engrossed in the protection of his employer's interests.

The second change, the transfer of the time study man's responsibility for the employer to the Bureau, was equally futile. This was to have been achieved by having the Bureau take complete jurisdiction over the men, including the responsibility for paying them. In theory, this might have been successful, but practically it had no effect because the time study man merely took a check from his employer and exchanged it for one of a similar amount from the Bureau. Thus for all practical purposes the situation was unchanged because it was obvious to everyone that any increase in pay would have to come from the employer.

Although the joint action was not discontinued completely until 1931, the abolition of the Joint Board in the 1924 contract marked the real end. From that time on, it became increasingly customary to bargain for the piece rates rather than rely on production standards.

While the plan failed to harmonize the divergent interests of the employees and employers, it cannot be said that it was a complete failure because it brought to the fore the possibility of the use of objective measurement as a remedy for the arbitrariness of wage bargaining. Furthermore it firmly established the principle of collective bargaining and refined the method by which it was carried on with respect to wage negotiations. Not the least benefit derived from this pioneering effort was the light that it threw on the whole problem of production standards. (1)

1. Ibid., pp. 370-371.

VII CASE HISTORIES OF PRESENT DAY PRACTICES

The Textile Workers Union of America (C.I.O.)

Faced with the increasing use of time study for setting rates, standards, and work assignments, the Textile Workers Union of America reluctantly accepts the fact that it must reconcile itself to its employment. This grudging acceptance arises from the union's conviction that the techniques are so crude that reliable results are extremely unlikely. From the standpoint of procedure alone, it contends that, in addition to the stop watch being inadequate and the observer being incapable of seeing enough, elapsed time is no guage of the physical and mental cost of work. Its distrust of present day procedure is further heightened by the unsound statistical methods used in selecting representative time values for each element and in converting the elapsed time to standard time.

To this indictment on procedural grounds, the union adds its condemnation of the manner in which the techniques are applied in the textile industry. On this score, its fundamental complaint is that the industry ignores the special subtle problems that accompany the application of time study to machine tending jobs, the characteristic ones in the industry. These arise as the result of multiple assignments, work duties and schedules being set by management and machines rather than the worker, the fact that the machines are serviced by a crew rather than by an individual, and the variations in quality standards set by management in vague terms and frequently not relayed to the workers. (1) The automatic preclusion of solu-

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1. Why the Workload Problem in the Textile Industry, pp. 3-11.

tions resulting from the neglect of these problems causes the union to question the fundamental validity of all standards and to look with extreme disfavor on their imposition upon its members. Another fault in its application that closely parallels this is the employment of time study men who are not well trained and fully acquainted with the problems of the textile industry. As is the case with other unions voicing this same objection, the Textile Workers Union feels that no one who is not completely familiar with the intimate details of production is capable of obtaining equitable standards. (1)

The criticism of management's attitude implied by the claim that it purposely excludes pertinent considerations in the determination of standards becomes overt in the union's discussion of allowances. On this point it is criticized openly by the union for niggardliness in the allowances and tolerances used in determining standards.

Recognizing that time studies will be used despite its opposition, the union has developed a time study procedure which incorporates in it an extensive system of safeguards to insure the most complete collection of data possible. It urges that its locals insist that management make its studies in accordance with this recommended method so that the workers will suffer a minimum of hardship from time standards. (2)

Acting on its conviction that management's omission of many pertinent factors surrounding the execution of machine tending jobs contributes much to the inaccuracy of standards, the union proposes that its locals re-

1. Union Procedure in Case of Management Time Study, p. 2.
2. Ibid., p. 2.

quire management to submit an exhaustive survey of the job and its surrounding conditions before the time study is made. By enabling the union to pick out errors and omissions in the company's specifications of standard conditions and job elements, the report aids in preventing the study from being incomplete or made under unrepresentative conditions--both of which inevitably lead to inaccurate standards.

The information deemed necessary to make this survey complete may be divided into two sections. The first is an outline of all work duties at the machine, including the duties of all workers who tend or service the machine. The other and more exhaustive section is a detailed specification of the job being studied. This specification contains all details of the job in question and the outside factors that effect its performance. In this latter category falls the machine data, which includes the type of machine, speed, standard efficiency, mechanical characteristics, in fact every detail concerning the machine that could influence the standard. The same is true of the data on materials and materials handling under which falls the size and weight of the units of raw material, its characteristics, where it is stored prior to use, how the finished product of the operation is handled, and where it is taken. Recognition of the tremendous influence that atmospheric conditions have over the ease with which the materials are worked impels the inclusion of this data in the specification.

In addition to these items the more basic factors of the operation, the job elements and their methods of performance, and the data on supplementary workers, are included in this section. As far as the actual job is concerned, each element should be itemized in the greatest possible detail

regardless of whether it is a regular element of the cycle or a miscellaneous one, with the method and quality of performance of each one. Because of the interdependence of the various jobs on a crew served machine, a record of the work elements--their time values, frequency of occurrence, and effect on the job in question if not performed promptly--of complementary workers is particularly in order to define exactly the work content of the job being studied and to discover the need for special delay allowances. (1)

After obtaining these specifications it is felt that the union representative should make an independent survey to insure that the elements and methods in the job specification conform to actual practice. (2) In making this survey the point to be verified is that the worker performs all the duties assigned to him by the specification. It is often the case that jobs only indirectly contributing to production are omitted or done less frequently than required by the specification because of job pressure. Correction of this condition prior to the study is essential for the determination of a true standard. Even more important from the worker's standpoint is the search made for duties performed by him that are not included in the job specification. Whether these duties are actually a part of the job or not, they should be noted and brought to the attention of management before the study is undertaken. In the event that they are declared to be no part of the job being studied, the worker should be taught how to eliminate them; if ajudged integral parts of the job, they should be included in

1. Why the Workload Problem in the Textile Industry, p. 9.
2. Handling Workload Complaints, p. 10.

the specification. Regardless of their eventual status, their unrecognized presence works to the disadvantage of the worker since the time needed for them will not be included in the standard.

Having established the exact elements that must be accounted for, the next phase of the union's survey is concerned with the performance of these elements. Since the method of performance has such a powerful influence on the time required for each element, the worker's execution of each of these is checked for its adherence to the method prescribed by management. Any variance from this method is thus brought to the fore and either adopted as an improvement or rejected, in this latter case the worker is taught the approved method. Whichever course is chosen, the union requires that a standard method be designated and the worker given sufficient time to become reasonably adept in this method before the study is made.

The influence of element performance is not restricted to that exerted by the method of performance. An equally important factor in determining the time required for a job is the pattern of performance. The union, recognizing that a vast difference exists between the time requirements of a random performance and a cyclical one, considers careful description and close adherence to the method of job performance a necessity. As in the case of element performance, it feels that a reasonable period of re-education should be allowed workers using unapproved element patterns before the standard is set. Only by thus standardizing the job before timing is it possible to arrive at equitable standards.

The last subject delved into in this pre-time study survey is the quality of work required. By establishing definitely the care or lack of

care required, it makes it possible to judge the satisfactoriness of the workers' performance and to standardize the workers' efforts so that they will not be penalized for exercizing more care than is necessary. Without this standardization the workers producing higher than the desired quality are faced with the problem of meeting a standard that was not set for them, the very situation that the union is striving to avoid. (1)

At the conclusion of the survey and before any study is made, the union submits its findings on the discrepancies between the specifications and actual practice to the company for action. After the necessary adjustments based on this report have been made, the union suggests that at least one week of the new conditions be allowed to pass before the time study is made to allow them to become stabilized. In addition to this general preparation, the worker selected for study must also be prepared. He must be taught any innovations of method that have been adopted, the full extent of his duties and their standard method of performance, and the quality standards that he is expected to maintain. Following this instruction several days should be allowed the worker to become accustomed to any changes that he may have had to learn. (2)

In choosing the worker to be prepared as the subject of the study, the union bitterly resists the selection of any but the average worker. It has no faith in the reliability or adequacy of rating or levelling; in its opinion no method gives less significant results than these. In preference to their use in those cases where the identity of the average wor-

1. Ibid., p . 10-12.
2. <u>Union Procedure in Case of Management Time Study</u>, pp. 4,5.

er is disputed, it prefers to have two workers timed--one selected by the company and one by itself. However, since many companies insist on rating even when the average is timed, the union, to minimize errors from this source, attempts to have the time study man inform the worker of his rating immediately after the study in the presence of the union representative. (1) This tends to keep the applied rating factor within reasonable limits.

Equally specific is the union in its recommendations about the conduct of the time study itself--both as to the number and nature of the studies and the conditions during the period of study. Expanding its general statement that the studies should be taken in sufficient number to represent fully all conditions likely to be found accompanying the job, the union asserts that a truly representative standard can only be obtained by taking a

> ". . . full study of different shifts, of various parts of the department, of various layouts of machines, of good and bad equipment, of humid and dry areas, of individual motor and belt driven equipment, etc. " (2)

In connection with this attempt to obtain time standards in which all possible conditions are represented, it is common practice for the union to set a minimum of two thousand hours of study.

With reference to the kind of study that is acceptable, the union is equally clear. It states positively that the basic studies must be full eight hour continuous studies in which all of the elapsed time is accounted for. Beyond this it recommends strongly supplementary machine studies which record element frequencies and snap-back studies of individual element times

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1. Ibid., pp. 6,7.
2. Ibid., pp. 4,5.

as tests of the adequacy of the basic study.

The union's concern during the period of actual study is with the application of the standards and specifications developed previously. To insure adherence to these, it has developed performance patterns for both the worker and the company. Shaping the worker's pattern is the general proposition that he shall do a normal job with normal diligence. Translated into specific terms this means that the worker is expected to perform all the elements in the specification according to the standards of work performance laid out for him. Stressing the point that no elements should be slighted, the worker is cautioned that he should be extremely careful not to overlook the so-called non-productive duties, the cleaning and servicing elements in the job, or the essential elements that have been omitted from the specification. In the latter case, these elements should be performed and then recorded by the worker so that they may be brought to the attention of the company.

The pattern of activities set for the company during the study is designed to maintain the job as it is described in the specification. To prevent any changes,it forbids the company to assign complementary workers to perform any task assigned to the worker or to make special preparations or improvements on standard conditions. The union considers that the time for positive company action has passed when the study is being made and that its responsibility is to maintain conditions at the point at which they were stabilized in preparation for the study.

Still seeking to make certain that no deviations from standard occur during the study, the union interviews the worker immediately following the completion of the study to determine whether there were any unusual

circumstances that might have affected his performance. This inquiry covers not only the external factors surrounding the job but also those intrinsic in the worker's physical and mental state. The unearthing of these intrinsic factors that might have caused the worker to deviate from normal diligence in his work is accomplished by finding out whether he felt better than usual, whether he was tense, or whether there was some other reason that he was working faster than usual. To learn whether any external factor might have influenced his speed he is questioned as to the existence of any unusual condition or extra help. All of this information is carefully recorded and held for use when the company announces the time to be allowed for the job. (1)

In this as in every industry in order to compute the standard time certain allowances must be added to the levelled time. On the subject of allowances the union takes a positive position as to their use and minimum duration. Emphasized less because of its general acceptance is the personal allowance. Five per cent is considered a sufficient allowance for attention to personal needs. Fatigue or rest time is the more important issue as far as the union is concerned. This is so not only because of its duration, a minimum of fifteen per cent of the day, but also because of the union's views on its use. A wide divergence of opinion exists on this latter point between the union and management due to their views on its proper use. Management conceives it as a provision to compensate the worker for loss of production due to fatigue during the latter part of the day and urges the worker to use it up in continuous production. The union, on the

1. Ibid., p. 7.

other hand, considers it to be a period during which the worker is to stop work and rest to recover from the strain of the job. Any other approach is, to the union, a travesty on the fatigue allowance as well as an uneconomic procedure. This latter contention is based on the results of fatigue studies that have shown weekly production increases resulting from the proper use of this allowance. (1)

Exhaustive as the above requirements are, the union realizes that they are no guarantee that the time study will be carefully made or properly interpreted. (2) For this reason they require "pragmatic proof of the satisfactoriness of the standard." (3) This proof consists of only one thing, the ability of the worker actually on the job to carry it and enjoy all the personal and other time allowances. If he cannot do this, it is considered adequate proof that the standard is in error. (4)

Since this proof is obtainable only through operating experience, the union strongly advocates a trial period during which the company may correct deficiencies that show up under operating conditions and the worker may test the standard. For this purpose a basic period of four weeks, subject to extension, is felt to be an equitable arrangement. If at the end of this period, the worker and the union feel that the standard is not correct, they then have the right to institute a grievance under the regular procedure to secure its revision. Failing to get satisfaction at this point, they may carry their grievance to arbitration for a final settlement. (5)

1. Handling Workload Complaints, pp. 12, 13.
2. Union Procedure in Case Of Management Time Study, p.8.
3. Handling Workload Complaints, p. 10.
4. Ibid., p. 12.
5. Regulating the Procedure for Handling Changes in Work Assignments, p., 10-15.

Although little mention is made of participation in the determination of standards, the Textile Workers Union's general condemnation of the theory and methods of time study leaves little doubt as to its attitude on this subject. The addition of the union's specific prohibition to its members never to indicate approval or assume responsibility for the correctness of a time study sheet allows no inference other than its complete rejection of any sharing in the development of standards. (1) Concerning itself solely with the protection of its members from excessive workloads resulting from the use of time study, it rejects all forms of participation, reserving for itself the right to challenge all standards. The purpose of its mandates to management is to minimize disputes, and as such are only indirectly related to the role the union has chosen. To construe them as signs of tacit acceptance of time study is entirely incorrect.

1. Union Procedure in Case of Management Time Study, p. 7.

VIII CASE HISTORIES OF PRESENT DAY PRACTICES (Cont.)

The United Electrical, Radio, and Machine Workers of America (C.I.O.)

Although the United Electrical, Radio, and Machine Workers of America is definitely opposed to time study on principle, it tolerates its use as a practical necessity. This opposition stems primarily from its experience that its greatest application has been to cut rates or compel the workers to exert undue effort in the execution of their jobs, and secondarily from its recognition of the fallibility of its methods. So firmly entrenched are these impressions that the union is convinced that,

> "one of the fundamental problems facing the union is that of protecting our members against unfair tasks set by time studies and against rate cutting resulting from the retiming of jobs." (1)

That this is a guiding principle of day to day negotiations as well as a top-level union concept was confirmed by Mr. John Murdoch of the New England Regional Office of the United Electrical, Radio, and Machine Workers of America.

To secure this protection the union reserves the right to subject all matters pertaining to time study to collective bargaining. Just how closely it feels it needs to define its position may be seen from the following clauses included in its 1947 model contract to guarantee that phase of the subject is removed from its jurisdiction.

> Section 43.
> "The U. E. shall be informed of any proposed time studies. The U. E. is not a party to time studies, but it shall have the right to bargain collectively concerning all matters pertaining to time studies, including the basic formulas used, the choice

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1. United Electrical Workers Guide to Time Study and Incentive Payment, p. 49.

> choice of the operator to be timed, the defining of average conditions, and the determining of the levelling factors and other time allowances.
>
> "The U. E. steward shall have the right to watch all time studies, and the operator shall have the right to know (how he was levelled) (the effort rating used) before the time study man leaves his machine or place of work. The U. E. shall receive a carbon copy of all time studies.
>
> "An allowance of _% shall be added for personal convenience to the time allowed for the job; at least _% shall be added to compensate for delays of less than __ minutes duration, and _% for fatigue."

The values for these allowances are determined wholly by bargaining, the union's object being to get as large an allowance as possible. Although it sets no maximum limit on their size, the union does establish a definite minimum, according to the nature of the work, for the fatigue allowance. By taking the position that the allowances, other than for fatigue, should be graded according to the type of work and working conditions the union, in effect, sets an indefinite minimum for them as well.

> Section 45.
> "Individual rates, job rates . . . and production standards may be challenged under the grievance procedure.
>
> Section 47.
> "New time values will not be set so that at normal effort the worker will earn less than previous straight time.
>
> Section 52.
> "Within (10) days after the execution of the agreement, the employer shall furnish the U. E. with all job classifications, job definitions, job rates, and rate ranges for all employees covered by the agreement . . . Such information shall be kept up to date."

Although the union requires the right to bargain all phases of the time study, it categorically rejects any sharing of responsibility in setting the standards. For purposes of bargaining it denies the need for a staff of trained engineers and time study men, taking the position that

it can teach its members to determine proper standards empirically without resorting to the use of unsatisfactory formulas. These empirical rates are extremely important since they are the criterion by which the adequacy of the company's standards are guaged. The ultimate test of acceptability is whether the worker is satisfied with his standard; it is toward this goal that all the union's efforts are directed.

In addition to the general treatment of time studies contained in the contract, the union makes certain specific requirements directed against particularly vulnerable practices in time study procedure. The first of these is that only the average employee may be timed. If such a study is levelled, the union prescribes the use of a five per cent levelling factor to compensate for the worker's faster pace induced by the nervousness caused by timing. Another requirement is that the selected time shall be the arithmetic mean of all the readings from several timings of the operation, and that deviation from this practice shall be sufficient grounds for rejection of a standard that is unsatisfactory. Relative to the inclusion of all the readings, the union is of the opinion that arbitrary rejection of seemingly abnormal times indicates that the time study results are being neglected in favor of the engineer's opinion. Any such action casts considerable doubt on the validity of the resultant standard.

Because of the difficulties involved in describing elements accurately, the practice of using synthetic time studies is frowned upon. It is considered too prone to inaccuracies and misuse.

Rating and levelling, in addition to their coverage in the general time study clauses, are given considerable special attention because of the ease with which they may be employed to the disadvantage of the worker.

They are so well adapted as camouflage for screening unjustified standard reductions that rigid control of their use is considered essential for the proper protection of the worker. This control consists of preventing indiscriminate restudy and of insuring that regardless of time study results the worker's rates are not cut unless there has been a really significant change in the job. (1)

> Section 44.
> "No job shall be retimed unless requested by the J. E., or unless substantial changes of method have been made, and at least 25% of the operation has been changed. Only that part of the job which has been substantially changed may be retimed.
>
> Section 46.
> "Recorded or standard time values . . . shall not be cut unless there is a substantial change in the job. Adjustment may be made only in that operation of the job which has been substantially changed, subject to grievance procedure.

Observance of these safeguards is by no means a guarantee that the standard will be accepted by the union. The fact that a worker is unable to complete his operation within the standard time allotted with the exertion of average effort is considered proof that the standard is incorrect, regardless of whether the company has adhered to the prescribed procedures, or that the company has failed to maintain job conditions set forth in the job specification. In either event, it is considered imperative that the standard for the job be voided and a new study made. (2) This attitude summed up by the unions statement that "at all times the company must justify its time studies" is the essence of its position on standards. Whatever acceptance is given them represents a bow to the inevitable, not a change of position.

1. Ibid., p. 68.
2. Ibid., p. 70.

The International Ladies' Garment Workers Union (A.F. of L.)

Diametrically opposed to the opinions on time standards and the desirability of participation in their establishment held by labor as a whole are those of the International Ladies' Garment Workers. This disparity may, in a large part, be attributed to the union's traditional policy of experimentation with progressive collective bargaining techniques in the furtherance of labor-management cooperation. Since its inception this union has pioneered many practices that were originally shunned and later embraced as standard practice by labor. (1)

Recognition of the need for experimentation and organized technical knowledge in this field has been the natural result of its experience in collective bargaining. The recent increase in the use of production standards has reinforced the union's conviction that it must take an active part in this sphere of management's activities. Two basic reasons brought the union to this conclusion, the first of these was the realization that the techniques involved were sufficiently unreliable to warrant careful observation in order to prevent serious errors,and the second was the appreciation that, despite these weaknesses,time standards could be an aid in the promotion of industrial efficiency, which would benefit labor as well as management if proper precautions were taken. (2)

To enable the union to act intelligently on these conclusions an industrial engineering department was organized by the International Ladies' Garment Workers Union in 1941 with two major objectives. The first of these was to "assist in improving the manufacturing techniques and operat-

1. Gomberg,"The Relationship Between Unions and Engineers," p. 425.
2. Gomberg, "Union Interest in Engineering Techniques," p. 356.

> ing methods of all branches of the industry in which our worker's earnings are intimately bound." (1)

This objective was adopted not in the spirit of altruism as might be inferred from isolated consideration but as a practical necessity to keep the manufacturers solvent so that the job sources would not be dried up. Its goal was to bring all of its manufacturers to a point where they were operating on a competitive basis thus assuring their continued existence.

The second objective pertained more directly to time standards themselves; it was that the department serve as a central information bureau for determining fair piece prices by recording the production systems and techniques under which these rates were paid and training the personnel of locals to judge the quality of time study practices used in determining rates, and render assistance to locals in their joint studies with management. (2) Two considerations urged the inclusion of this as one of the objectives of the new department--the need for labor's viewpoint and experience in the administration of industrial engineering techniques, and the inherent weaknesses of time study due to the lack of refinement of its methods. (3)

The first of these arose from the union's observatin that factors vital to the successful application of engineering techniques were often overlooked either through oversight or for the sake of expediency. By setting up this central source of technical information and aid, it was felt that many failures in the use of standards due to these causes could be averted. By giving the locals access to expert opinions on the validity

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1. Gomberg, "The Relationship Between Unions and Engineers," p. 425.
2. Ibid., p. 425.
3. Gomberg, "Union Interest in Engineering Techniques," p. 359.

of management's methods and systems and providing them with a source of counter measures to be offered in place of those that were found faulty, the union was persuaded that it could do much to improve the quality of standards. The other consideration that impelled the selection of this objective was the very real possibility of arbitrary action due to the presence of a subjective element in the time study procedure. This above all else motivated the union to press for the right of active participation and to organize for effective joint action.

Inasmuch as none of the reasons set forth for the establishment of the department were either unique or of recent origin, it must be recognized its organization is a refinement, not an innovation, for the union. For many years the International Ladies' Garment Workers has taken an active part in the establishment of standards, but never before had the efforts of the locals been coördinated or aided by a central agency. The same elements that occasioned this department brought about the individual locals' participation.

Regarding the technical weaknesses of time study methods,one of its most frequently used arguments for labor participation, the union is both specific and detailed. Starting from the source of the data,the worker and his equipment, the union challenges the practice of considering the standard obtained from time study to be an absolute value. It finds it impossible to believe that the standard is more than a relatively accurate approximation in view of the practical impossibility of bringing under complete control such vital factors as the exact techniques used by the operator studied, the consistency of tools and equipment furnished, and the variations traceable to the measuring instruments utilized, to say nothing of the

physiological and psychological effect of the standard on the worker and the worker on the standards. Although these are more academic than practical considerations at the present time, they are offered as fields of inquiry which must be explored and carefully mapped before standards can attain any degree of real reliability. (1)

Aside from these academic considerations, there are many tangible aspects of every-day time study practice which the union challenges. One of the more basic of these is the degree of accuracy obtainable with a stop watch, especially in the timing of short elements. Its doubts on this score were reinforced by an experiment performed in the New York University industrial engineering laboratory in which the arithmetic mean of the readings of seven competent time study men deviated thirteen per cent from a true value of a 2.50 minute element. To the union this indicates a complete breakdown of the watch in this range. (2)

Arising as a natural consequence of this demonstration is the union's complete scepticism concerning the use of the selected minimum as the representative time for an element of short duration. The average of an unreliable arithmetic mean and a minimum reading which may be an aberration of the watch, the observer, or both has no claim to representativeness in its opinion. Even with elements whose duration places them within the range where the error in the arithmetic mean is likely to be insignificant, the statistics of this method are impossible to justify--no sampling test will sustain a value obtained with this method. As far as this union is

1. Gomberg, "The Union Looks at Management Engineering,"
2. Gomberg, "The Relationship Between the Unions and Engineers," pp. 427,428.

concerned, the most representative values will be obtained through the use of the simple arithmetic mean of all the readings, assuming that the sample taken is large enough to give it statistical validity. The preference shown for this method is based on the statistical law that states that as the number of readings increase the typical value will approach the mean. (1)

Similar to the concern for the treatment of the raw data is that shown for the statistical treatment of the basic data used in assignment of values for the contingency allowance. (2) The problem here lies in the fact that despite the existence of a statistically valid method of arriving at this allowance,the ratio-delay method developed by R. L. Morrow, the usual allowance is a pure estimate with little or no mathematical backing. Thus in order to assure itself of its adequacy, the union feels obliged to inspect the data and computations used in arriving at it. This, however, is much less satisfactory than the use of the ratio-delay method which removes the possibility of arbitrary and unreasonable allowances. (3) Its continued failure to obtain its widespread adoption has forced the union to exercise constant vigilance.

Less subject to exact measurement and therefore more controversial than the contingency allowance are those for personal needs and fatigue. This is particularly true of fatigue about which there is almost a complete lack of knowledge. (4) Being aware of this situation the union asserts that, in view of this paucity of knowledge, unilateral determination of rates is impossible and that the workers must have a voice in their development.

1. Ibid., p. 427.
2. Gomberg, "Labor Examines Time Study Methds."
3. Gomberg, "The Relationship Between the Unions and Engineers," p. 427.
4. Ibid., p. 428.

If any additional justification for this opinion is needed, it may be found in the widely varying standards obtained by using the different methods for assigning this allowance that have come into existence because of the absence of sufficient knowledge of fatigue and the physioligical needs of the worker. (1)

As real as these sources of error are, their importance pales when the errors inherent in the methods of levelling are considered. Prompting this evaluation is the union's belief that the errors due to the former causes can be corrected by modifications in the procedures whereas those attributable to levelling can be remedied only by a complete revision of the method. The present methods of levelling,depending as they do on the time study observer's comparison of a worker with an ambiguous, hypothetical average worker, are too subjective for the union to feel much faith in their adequacy. Until such time as this average man is reduced to definitive statistical terms or a new method is introduced, it will continue to maintain its position that there should be no unilateral development of standards regardless of improvements in other phases of time study. It feels that in so subjective a procedure the workers who are intimately acquainted with the operation being studied should be given the right to level jointly with the observer. In this way injustices and their inevitable companions, wage disputes, will be reduced to a minimum. (2)

Despite the fact that the International Ladies' Garment Workers Union is cognizant of the serious shortcomings of present time study methods,

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1. Gomberg, "Labor Examines Time Study Methods."
2. Ibid.

it does not reject it. On the contrary, it advocates its use. The explanation of this paradox is that while the union is perfectly aware of these weaknesses, it is equally aware of the absence of a superior method of establishing a reasonable day's work. This acceptance is by no means unqualified. (1) To prevent these limitations from working to the detriment of the workers and to establish a logical basis for bargaining, it insists that it is absolutely necessary for the union to take part in the establishment of standards. (2) That this may some day be unnecessary is envisioned by the union, but with the present severe limitations of knowledge it has no choice but to reject such a procedure. (3) Too much reliance is placed on human judgment to permit any other course. (4)

Two conditions must be met for the proper effectuation of this policy. The more important of these is that the union supply itself with trained personnel capable of dealing management's engineers on their own terms. So unsatisfactory are the usual courses in time study available to union personnel that properly equipped time study stewards can only be assured if the union undertakes their training itself. By this means alone can it be assured that these men will be capable of evaluating management's methods critically and meeting management on its own level. (5) Experience has demonstrated repeatedly that unless this is done the training that these people receive is so superficial that they are little more than time study clerks with insufficient knowledge to examine the methods critically. Lack-

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1. Ibid.,
2. Gomberg, "Union Interest In Engineering Techniques," p. 357.
3. Gomberg, "The Relatiohship Between the Unions and Engineers," p. 428.
4. Gomberg, "Union Interest In Engineering Techniques," p. 363.
5. Ibid., p. 363.

ing this capacity, their usefulness to the union is negligible since it is inevitable, given a certain set of assumptions and a clerical procedure, that they arrive at the same standard as management. It is only when studies made independently of management, with methods considered adequate by the union, are available that a proper basis for bargaining rates is secured. (1)

The second prerequisite is that employment be conditioned by membership in the union. Without this, the union is faced with a situation where any constructive action places its existence in jeopardy. This threat to its existence arises from the ability of discontented members, who have resigned from the union, to remain on their jobs and work toward the destruction of the organization. To forestall this eventuality, the International Ladies' Garment Workers regard a strong security clause as an absolute necessity. (2)

Fundamental to this whole question of participation in time study and the motivating force behind all its work on this subject is the union's firm conviction that its principal concern is the promotion of the worker's welfare. Because unilaterally determined standards are a threat to their welfare, its policy includes joint determination of standards as a means of neutralizing this threat. (3)

1. "Economic Fundamentals of Collective Bargaining."
2. Gomberg, "Union Interest in Engineering Techniques," p. 364.
3. Gomberg, "The Union Looks at Management Engineering."

IX CONCLUSION

The vast majority of unions are not convinced that present day time study techniques are the means of arriving at the production quantities that can be reasonably required of their members. Aside from all historical antipathy toward time study, which is by no means a minor determinant of labor's attitude, there are sufficient tangible falws in the methods of determining time standards to enable labor to develop a strong brief for its case. Assuming management's willingness toset equitable standards, a situation which is not always the case, even then, the departures from objective procedures necessitated by the absence of such means for determining fatigue allowances, reducing data to terms of the normal worker, and the various other allowances that are not readily computed by statistical means are eloquent spokesmen for labor's contention that unilateral determination of standards is no way to obtain equitable tasks. With the exception of those unions which have been able to exclude the use of standards entirely, it is generally agreed that some jurisdiction over them is essential. At this point the unanimity of labor on the subject of time standards comes to an end. The variety of plans devised to gain this jurisdiction over time study methods and standards is almost as great as the number of organizations faced with the problem. Widely divergent as the individual measures are with respect to their details, close examination of these means shows that in general the devices adopted may be grouped into two generalized categories. It is from these that the pattern of labor reactions becomes apparent.

The first and most densely populated category is that which includes the multitude of plans which accept time standards passively, indi-

cating this acceptance either by not prohibiting them or by including a vague statement of acceptance in agreements with management or statements of union policy. In either case this acceptance has been surrounded by restrictions so as to guard against the imposition of unreasonable standards.

Within this group, no attempt is made to follow a constructive course with respect to standards. As visualized by those who accept time standards passively, their function is one of censorship. By permitting the standards to be created and just reserving to themselves the right to criticize and reject, they feel that their responsibility on the subject is discharged. Taking the position that they do concerning the limits of accuracy attainable with present day methods, this function is really the only one which is consistent with their views. Certainly, with the grave doubts that they voice, aiding in imposition of standards would be a highly inconsistent policy to follow.

The specific bases for these doubts are legion. The possibilities of human and mechanical error and of duplicity on the part of management, the use of incorrect statistical procedures, the realization that vital elements are neglected either through lack of a detailed understanding of the operations studied or the refusal of the authorities to recognize their pertinence, the inconsistencies in standards attributable to the use of different methods of obtaining raw data--all of these specific causes of incorrect standards are put forth as grounds for their conditional acceptance. Forceful as these causes may be, their significance pales before the prime cause of labor's discontent with time standards--levelling. This above all else has prevented an unqualified acceptance of time study. No union, even

though convinced that the other faults are correctable, is willing to relinquish all control of the results of a technique requiring so questionable a mechanism as this.

This group finds it impossible to reconcile the claims that management makes for its accuracy with the presence of a purely subjective determinant of standards. It is felt that no real faith can be placed in a technique which relies even partially on personal judgment. Far too much dependence is placed on intangible thought processes, impossible of verification, for any other attitude to be entertained by it. How, it asks, can any wholehearted reliance be placed on a technique whose most avid proponents are unable to claim less than a five per cent error stemming from this factor alone? (1) Reenforcing the arguments on this point still farther are Ralph Presgrave's statements that although levelling meets the demands of expediency, it is impossible to rationalize convincingly. (2)

Dropping the assumption that this device is used with absolute integrity further strengthens the arguments for retaining some form of control over standards. This step in the determination of standards lends itself exceptionally well to manipulation because of the impossibility of verification. Too often has labor been subject to unethical treatment for it to ignore this possibility. Even in the case of the Cleveland garment industry experiment, where a high degree of cooperation was achieved, it was found necessary to engage an engineer to represent each side. Probably the most overt in its objection on this ground is the United Electrical Workers

1. Barnes, Motion and Time Study, p. 277.
2. Presgrave, Dynamics of Time Study, p. 83.

which states flatly that levelling can be and is utilized as a means of keeping rates low.

The major problem facing the proponents of passive acceptance is not the justification of their attitude, but rather the execution of their censorship function. Should they restrict themselves merely to passing judgment on the completed standard or should they become involved in the regulation of the methods employed in arriving at these standards? That is the question facing every labor group in the category that reaches this pint in its consideration of standards. The responses to it are extremely heterogeneous involving a wide range of regulatory activities.

Many, feeling that their only concern is with the justice of the standard as it is finally applied, wait until the completed standard is offered to them for review before taking any steps to insure its equity. A common procedure utilized for the testing of the standard is to subject it to a trial period during which time the worker's average wage is guaranteed him regardless of his ability to meet the standard. The final acceptance of the standard depends on the worker's demonstrated ability to produce at the rate specified by the standard. Unsatisfactory rates in this, as in every other case, are subject to collective bargaining procedures.

A similar but less formal method of protecting the worker from excessive tasks is to allow all standards to be put into effect subject to collective bargaining if they prove burdensome. Unsatisfactory rates may be prevented either through the regular grievance channels, or as in some cases, through special channels set up for this particular purpose. Whichever of these three methods is chosen, the final action is the same--all standards found to be in error are brought up for discussion and adjustment.

Others, believing that the number of unacceptable standards can thereby be reduced, concern themselves with the methods by which the standards are reached. Only,however, to the extent of setting up minimum requirements that must be met in the development of the standard do these unions become involved with the mechanism of time study. Specifically, the pursuit of this policy leads them to state the level at which the standard should be set with relation to the normal worker's output, the time that should be spent in making a study, the conditions which should exist during the period of timing, the circumstances under which retiming should be undertaken--in fact, any detail that would affect the final result is considered to be a legitimate subject forthis type of control. Although the group as a whole covers practically every apsect of time study, the degree of thoroughness of the individual union is extremely variable. Some take great pains to cover every possible contingency while others are satisfied with setting the level below which the finished standards shall not go.

Irrespective of the course they follow, the object of all the unions in the group is identical. Whether they do nothing more than make provision for protesting the standard or prescribe minimum requirements of an exhaustive list of conditions, their whole object is to safeguard their membership from hardships resulting fromthe imperfection of the time study technique.

The second and much more sparsely populated category includes those unions advocating active participation in the determination of standards. Only one union, The International Ladies' Garment Workers, has bilateral determination of standards as a general policy. All other instances

have been the result of decisions made at the local level, arising from special circumstances and being limited to the particular local union involved. This union, unlike any other, has developed a method of dealing with standards that entails its active participation in their creation. To insure effective action in this field, it has organized a management engineering department to which research on and supervision of standards is assigned as a major function. By keeping abreast of management in this field, it feels that it can lend sufficient aid to individual locals, who are directly in contact with problems, to enable them to reduce to a minimum the risk of being subjected to inequitable standards.

Although this type of program is unique, it is neither the product of naivete or false reasoning. Certainly, no union is more familiar with the weaknesses of time standards. For years it has been exposing the unfair and erroneous practices indulged in by time study men. Taking into consideration all of the reasons that have impelled the almost unanimous advocacy of passive acceptance, the International Ladies' Garment Workers Union reached the conclusion that their interests could be advanced farther by active participation than by refusing to assume any responsibility for the development of standards. Its decision to follow this path rather than that followed by so many of the unions, is attributable to its disagreement with two conclusions reached by the others. The overwhelming majority present the fallibility of the techniques used in determining standards as a primary reason for rejecting any sharing of responsibility for them. Antipodally, the International Ladies' Garment Workers Union presents this reason as an important factor in its decision to become actively involved with them. Recognizing that labor's lack of faith in them

will not deter their use by management, its position is that serious errors can be most effectively prevented by stopping them at their source rather than attempting to eliminate them as they manifest themselves in the finished standard. Since only by being at the source can errors be caught there, active participation is advocated and practiced by this union.

Furthermore, unlike labor as a whole, it finds much potential benefit in their use, which benefit derives from the increased industrial efficiency.

The pattern that emerges from the tangle of detail is quite simple. Such a predominance of labor favors a passive policy that with the minor exceptions noted, it appears that there is really no significant movement toward any position but that of rejection of any real part in standards is the course chosen by labor. To go beyond this point is to exceed the limits of union function and to weaken its position with its rank and file membership.

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Segel

Labor participation in time standard determination

DATE	ISSUED TO
Nov 2	Risly
Nov 9	

Nov 2